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CLIMATIC CAUSATION OF DISEASE.*

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This subject, while one of the broadest in its scope, and dealing directly with the physiological effects of the medium in which we have our existence, is perhaps the least understood of all the questions bearing on the etiology of disease, and has received from investigators the smallest amount of attention.

The reason for this is at once obvious, for there are many barriers to the study of this question. It is a difficult task to collect statistics from which to study the causes of disease, especially in sufficient numbers to give reliable results. The causes of many diseases, however, can be studied from mortality statistics, of which there is a vast amount accessible. Where the disease is one attended with occasional fatality, the deaths furnish a basis for the study of this subject. When large populations are considered it is safe to assume that on an average the daily, yearly or monthly deaths from a disease will bear a constant proportion to the cases of sickness from that disease, and such being the case, very accurate studies can be made of the causes of those diseases from which deaths occur, for whatever aids in the cause will show its effects in the latter stages as well as in the first; and it fol-

lows that deaths should be more frequent with, or immediately following, those conditions of climate which tend to cause the disease. There are, however, objections to offer to this method, such as mistakes in the diagnosis of diseases and the irregularities in nomenclature. This, it is true, makes the question more complex and difficult to study, but results of sufficient accuracy can be obtained to lead to correct conclusions as to the relation of climate to the cause of disease. To accomplish even small results in this line requires years of hard labor, and that the investigator have both medical and meteorological training.

It is gratifying to note that some of our leading medical institutions are introducing meteorology in their curricula, and it certainly cannot be many years until medico-climatology will be recognized as of such importance that all first-class medical institutions will accord it a chair in their faculties.

We are taught that in the study and practice of medicine the end in view and the object to be attained is a knowledge of how to prevent, relieve and cure disease. The application of this admonition consists not only in the administration of medicines, but also in a thorough knowledge of all matters which influence the various morbid conditions to which the

*Read before the Texas State Medical Association in the Section on Practice of Medicine, April 23, 1895.

human economy is liable. There can be no doubt that of the many factors which contribute to help or hinder physical well-being a very large share must be attributed to climate understood in its widest sense, particularly to those conditions of atmosphere and soil which are constantly operating upon the human organism by day and night. The air breathed, its temperature, vapor of water, purity and pressure; the amount of sunshine received; the character of the winds; the nature of the soil; all have a potent influence upon the organism in health in causing or preventing disease, and still more potent is its influence upon the organism in its unstable and sensitive condition when already the subject of disease.

The position occupied by the physician in this respect is one of great responsibility, and notwithstanding the vastness of the subject it is attracting the attention of leading medical practitioners in all parts of the country. It frequently falls to the lot of the physician to select a climate for a patient, which determines whether or not life shall be prolonged and suffering relieved, and a mistake is fatal. During the ten years which I have been connected with the Weather Service in Texas, I have received a large number of communications from physicians in the populous centers throughout the country, looking for climates in which to locate their patients to the best advantage. Information concerning the prophylactic and therapeutic properties of this or that climate is being diligently sought. The conclusions which have been reached in regard to these properties of climate have, until within the past few years, been altogether empirical, and still are so in a great measure in so far as the profession is advised.

However, definite conclusions have been reached relative to the effects produced by climate on some of the more important diseases. By the study of the effects of different climatic conditions and changes on the different organs, from what we know of the physical effects produced by such conditions and changes, and the study of the relation of diseases to these conditions by the correlation and study of the vast amount of accessible facts, results are reached which are fast paving the way from empiricism to logical and sound conclusions. Some valuable though lim-

ited investigations relative to the climatic distribution of pulmonary phthisis in Massachusetts were made by Dr. H. I. Bowditch*, of that State, some years ago, from which he reached the conclusion that the disease was more frequent in low, damp localities than on higher land. Similar investigations† were made a few years later by Dr. G. Buchanan, of England, relative to the distribution of the same disease in that country, and he arrived at conclusions similar to those of Dr. Bowditch. It remained for Dr. H. B. Baker, Secretary of the State Board of Health of Michigan, to commence the study of the relation of climatic conditions to the cause of certain diseases, and while his work is devoted to the seasonal relation which exists as the cause, his results are of great value.‡ I have gone more minutely into this question,§ and have investigated the relation between the causation and fatality of certain diseases and weather changes which take place from day to day, as these appear to be of greater importance than the seasonal changes, on account of their suddenness and frequency which shocks the system even when in health; and I have also studied the causes for the climatic distribution of diseases.

To ascertain the climatic causation of disease, the physical effects produced by known climatic conditions and sudden changes in the weather on the different organs of the human economy must be understood, as well as the climatic influences which produce these effects. The Weather Bureau keeps the climatic record for nearly every locality, and with these conditions known, and also a knowledge of the diseases which prevail, the desired results can be obtained. Congress has made appropriations for investigations pertaining to climatology and sanitary science for the entire country||, and there is no doubt but that much will be accomplished in this direction in the near future.

* Med. Com. Mass. Society, Vol. X., No. 11, 1862.

† Tenth Report of the Officer of the Privy Council, 1867.

‡ Annual Reports of the Mich. State Board of Health, 1886, et sequel.

§ Special Bulletin No. 4, Texas Weather Service August, 1894.

|| An Act making appropriations for the Department of Agriculture for the fiscal year ending June Thirtieth, Eighteen hundred and Ninety-six; Weather Bureau, general expenses.

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Temperature and moisture conditions of all climatic factors play the greatest parts in determining the healthfulness of a locality. The purity of the atmosphere is also an important factor, and one which must be kept constantly in mind. It is only the general relative purity of the air which makes this condition second to the preceding ones. The purity of the air for low levels depends in a great measure on the source from which the winds are derived. If they are continental they contain more or less impurities at all times; while, if they are oceanic, they contain chlorine and other antiseptic properties. The purity of the atmosphere increases rapidly with an increase in elevation. The amount of sunshine is of great importance in this respect.

In the investigation of this question there are some physical deductions concerning the capacity for moisture of the atmosphere at different temperatures, which must be kept in mind. From the meteorological tables of Guyot,* it is ascertained that a cubic foot of air at a temperature of Zero (Fahrenheit) can contain only 0.5 of a grain of vapor of water; at 32 degrees it can contain 2.13 grains; at 65 degrees it can contain 6.8 grains; at 95 degrees it can contain 17.14 grains; while at 98.5 degrees—the temperature of the body—it can contain 18.96 grains, nearly nine times the quantity which can be contained at a temperature of 32 degrees. Air at a temperature of 32 degrees and saturated with moisture (that is with 100 per cent. relative humidity), contains only one-fourth of the quantity of vapor of water which exists at 50 per cent. of saturation with the temperature at 95 degrees. Evaporation increases with a rise in temperature much more rapidly than it does with a decrease in moisture, which is due to the rapid increase in the capacity for moisture of the atmosphere with the increase in temperature as just noted. Evaporation from external surfaces of the body under average conditions carries off from the system through the skin a large amount of organic matter and water; such being the case a sudden fall in temperature, or an increase in the amount of moisture not accompanied by an increase in temperature, checks this action and increases the labors of the respiratory system, the kidneys and

other eliminative organs, which, through any predisposition to disease or temporary weakness, often causes serious diseases. Any sudden weather changes are unfavorable to the successful treatment of most diseases, while in a few certain changes prove favorable. Decided change in temperature excites the nerve centers and, in exciting the vaso-motor center, disturbs the vascular system and causes the capillary vessels to become gorged and paralyzed, which is a cause for inflammation in the parts so affected.

Conduction of heat from the body to the atmosphere increases with the increase in the amount of vapor of water, and is an important factor in studying the effects of the temperature of the atmosphere on the body, both externally and internally. The range between day and night, and sun and shade temperatures produces marked effects on the human organism. These effects are most pronounced during the summer months when the differences between day and night temperatures, especially where there is much radiation, often amount to 50 or 75 degrees, and that between sun and shade temperatures amount to 40 or 50 degrees. After fatigue in the sunshine, when night comes on, or on retiring to the shade, a decided change in temperature is experienced. The difference shown by the thermometer between day and night, and sun and shade temperatures is not all that is felt; this is materially augmented by conduction where there is considerable moisture, and to these are to be added the cooling effects of evaporation. When the body has been exposed and forced to adapt itself to a high sun temperature and is suddenly transferred to a medium, with the temperature 50 to 75 degrees below the sun temperature and the organism is at rest, it is subjected to rapid cooling by the conditions just mentioned, which contracts the capillaries of the skin, interrupts the blood in the proper performance of its functions, and results in local or general congestion.

The effects which are produced by the differences in the capacity of air at different temperatures for vapor of water, are most marked on the respiratory system, for here we have not only to consider the external evaporation but, in some climates, the excessive internal evaporation. Air at moderately low tempera-

*Guyot's Meteorological Tables, 1859. pp 92-93.

tures (even not below 32°) when inhaled has its temperature increased to that of the body, 98.5° , or at any rate to within three or four degrees of this, and its capacity for moisture is greatly increased on account of the rise thus brought about. With an average of twenty respirations per minute (28,800 per day) and the amount of air taken into and expelled from the lungs at each respiration, 21 cubic inches, we have a total of 350 cubic feet of air used in respiration daily. Physiologists are generally agreed that the quantity of vapor exhaled from the lungs depends greatly upon circumstances, such as the rapidity of respiration, dryness or humidity of the atmosphere, and the activity of the pulmonary circulation. It is apparent, however, that the quantity of water given off from the system in the form of vapor in excess of that received during respiration depends almost entirely upon the temperature of the air inhaled. Assuming that the air leaves the body at a temperature of 98.5° and is saturated with moisture, it would carry from the lungs 6,636 grains of water in the form of vapor, daily. The important point in this connection is the excess in the amount of water exhaled from the lungs over that inhaled. For example, take a locality with the average daily temperature 32° during the cold months (there is a large area of the United States with an average daily temperature below this during some of the winter months), and the average relative humidity 75 per cent. (which is rarely exceeded), each cubic foot of air would contain about 5.1 grains of vapor. The amount of water taken into the lungs by respiration during a day under these conditions would be 1,758 grains, while the amount exhaled, 6,636 grains, shows an excess daily of 4,851 grains of water given off from the system through respiration over that received. The excess becomes greater as the temperature goes lower and less as it rises, while the per cent. of moisture remains constant. To furnish the complement of water between the amount inhaled and that exhaled, causes rapid evaporation to take place from the lining mucous membrane of the air passages and air cells of the lungs, where such weather prevails. The fluids from the pulmonary circulation, which normally keep the lining membrane of the lungs

moist, contain more or less of the non-volatile salts carried in solution in the blood.* These salts are left as a deposit from the water carried out of the lungs during respiration, in quantities depending upon the amount of salts in the blood at the time, and the extent of the evaporation which takes place. Simple physical deductions give these conclusions, but they have been substantiated by analysis.†

In this connection we have the established fact that albumen will not pass through an animal membrane toward pure water, while it will pass to a solution of salt; and the more rapid the movement of the fluid the greater is the amount of albumen which passes through to the salt solution.‡ This being the case it results, when there is a deposit of salt on the mucous lining of the lungs, that exudation of albumen into the air passages and air cells of the lungs takes place.

Such I am inclined to believe are the exciting causes of pulmonary diseases, as they are favorable for the lodgment of the germs to which most of the diseases of the respiratory system are due; and it may yet be established that the lodgment and growth of these germs depend upon the extent of these conditions in the lungs.

In my studies of the relation of sudden changes and abnormal departures in temperature to the several diseases, from records in some instances covering twenty years I have obtained some interesting results. From the diseases which I have studied separately, which embrace more than a hundred and twenty-five, the following gives the greatest number of deaths and also shows a decided increase or decrease in mortality with certain temperature conditions with which we come in contact every day.

Deaths from pulmonary phthisis are 25 per cent. less on days with minus, and 38 per cent. greater on days with plus changes in temperature than on days with stationary temperature; and are 33 per cent. and 20 per cent. greater, respectively, on days with abnormally high and abnormally low temperature, than on days with normal

*The Causation of Pneumonia by Dr. H. B. Baker, Lansing, Mich., 1888.

†Medico-Chirurgical Transactions, Vol. XXXV, London, Eng., 1852.

‡Dr. Felix Hoppe, Virchow's Archives, Vol. IX, 1856, pp 245-268.

temperature. The greatest number of deaths from this disease always follows the occurrence of the lowest temperature.

Deaths from pneumonia are 75 per cent. greater with any decided change in temperature than with stationary temperature; and are 44 per cent. and 78 per cent. greater, respectively, on days with abnormally high and abnormally low temperature than on days with normal temperature.

Bronchitis gives a slight increase in deaths on days with minus changes in temperature; and they are 67 per cent. and 117 per cent. greater, respectively, on days with abnormally high and abnormally low temperature than on days with normal temperature.

Deaths from congestion of the lungs are 86 per cent. greater on days with abnormally low temperature than on days with normal and abnormally high temperature; and are 43 per cent. and 79 per cent. greater, respectively, on days with decided fall and decided rise in temperature than on days with stationary temperature.

Deaths from membranous croup are 166 per cent. greater with either decided rise or decided fall in temperature than on days with stationary temperature; and are 200 per cent. greater with any abnormal temperature than on days with normal temperature.

In all diseases of the circulatory system quite a similarity is found in their relations to temperature conditions. Deaths are 100 per cent. and 55 per cent. greater, respectively, with sudden rise and sudden fall in temperature than on days with stationary temperature; and they are 10 per cent. greater on days with abnormally high temperature, and 10 per cent. less on days with abnormally low temperature than on days with normal temperature.

Deaths from the diseases of the blood are 50 per cent. greater on days with decided rise in temperature, and 30 per cent. less on days with decided fall in temperature than on days with stationary temperature; and are 50 per cent. greater on days with abnormally high temperature than on days with normal or abnormally low temperature.

From diarrhoeal diseases deaths are 52 per cent. greater on days with decided rise in temperature, and 40 per cent. less on days with decided fall in temperature than on days with stationary temperature; and are 25 per cent. and 10 per cent.

greater, respectively, on days with abnormally high and abnormally low temperature than on days with normal temperature.

From diseases of the kidneys deaths are less frequent on days with rising temperature and on days with abnormally high temperature, than on days with stationary normal temperature; are 158 per cent. greater on days with a decided fall in temperature than on days with stationary temperature; and are 80 per cent. greater on days with abnormally low temperature than on days with normal temperature.

Deaths from diseases of the nervous system are 30 per cent. and 18 per cent. greater, respectively, on days with a decided rise and on days with a decided fall in temperature than on days with stationary temperature; and are 52 per cent. greater and 30 per cent. less, respectively, on days with abnormally high and on days with abnormally low temperature than on days with normal temperature.

Deaths from typhoid fever are 38 per cent. greater and 10 per cent. less, respectively, on days with decided rise and on days with decided fall in temperature than on days with stationary temperature; and are 28 per cent. greater and 25 per cent. less, respectively, on days with abnormally high temperature and on days with abnormally low temperature than on days with normal temperature.

From malarial diseases deaths are 40 per cent. and 10 per cent. greater, respectively, on days with decided rise and on days with decided fall in temperature than on days with stationary temperature; are 30 per cent. greater on days with abnormally high temperature, and are 30 per cent. less on days with abnormally low temperature than on days with normal temperature.

Deaths from diphtheria are 75 per cent. and 135 per cent. greater, respectively, on days with a decided rise in temperature and on days with a decided fall in temperature than on days with stationary temperature; and are 150 per cent. and 68 per cent. greater, respectively, on days with abnormally high temperature and on days with abnormally low temperature than on days with normal temperature.

Deaths from old age are 50 per cent. greater on days with plus changes in temperature than on days with minus changes in temperature and on days with stationary temperature; and are 30 per cent. greater

on days with abnormally high temperature than on days with either normal or abnormally low temperature.

In considering the physical effects produced on the organism by the more important climatic conditions and the known relationships between climatic conditions and diseases, I have divided climate into three general classes, viz: Low, damp, *cold* climates; low, damp, *warm* climates; and high, dry climates. These features of climate are determined by latitude, by proximity to large bodies of water and by altitude.

A low, damp, *cold* climate is one where the altitude is small, and is of relatively high latitude; the temperature in winter is comparatively low, and the per cent. of moisture (saturation) is relatively great. On account of the low temperature in winter the amount of vapor of water present is small, which causes excessive evaporation from the mucous lining of the lungs as a result of the increased temperature of the air during the process of respiration. The relative humidity being high no evaporation of consequence takes place from external surfaces. The winds are generally continental and give an atmosphere containing more or less impurities. Sudden changes and abnormal departures in temperature are either more frequent or of greater effect in this character of climate than in the others. The diurnal range in temperature is generally great, and the conduction of heat from the body through the moisture medium, particularly during the warm season, is marked and adds to the effects of the temperature changes, and the differences between sun and shade temperatures reach their maximum. These conditions tend to cause certain diseases and to increase the fatality of others.

The excessive evaporation from the mucous lining of the air-passages and air-cells of the lungs, with limited external evaporation as a result of the low winter temperature and high relative humidity of this climate, combined with the sudden changes and abnormal departures in temperature, give the conditions which cause, or favor the cause of diseases of the respiratory system and, consequently, we find pulmonary phthisis, pneumonia, congestion of the lungs, pleuritis, bronchitis, and asthma more frequent in this climate than the others. Diseases of the

kidneys are frequent, due to the high degree of saturation with vapor of water constantly present, and also to the frequency of sudden falls in temperature, either of which reduces the amount of water and organic matter eliminated through the skin, the former constantly and the latter spasmodically, and hence increases the elimination through the kidneys.

It can hardly be claimed that typhoid fever is caused by climatic conditions, yet these conditions either favor or prevent the development of the germ of the disease, and its fatality is increased or diminished by climatic changes. It is a summer disease, occurs at a season of the year when decided changes in temperature are more frequently rises, and abnormal departures are more frequently excesses, neither of which conditions are favorable to recovery from this disease, and both favor germ development.

The decided rises in temperature in this climate are unfavorable to diseases of the blood, as mortality from causes of this character is least on days with stationary and minus changes in temperature, and greatest on days with rises in temperature and on those with abnormally high temperature. Diseases of the circulatory system are always greatest where the most frequent decided changes in temperature occur, which is in low, damp, *cold* climates. Diarrhoeal diseases are almost confined to the summer, and are most frequent in this climate on account of the extreme changes in temperature experienced that derange the functions and bring about more or less congestion, which is a factor in causing these diseases. Nervous diseases are frequent in this climate as a result of the sudden changes in temperature and the diurnal range which excite the nervous centers. Diphtheria is a cold weather disease and is most frequent in this character of climate. Malarial diseases are almost exclusively confined to low, damp, *cold* climates. The differences in temperature experienced in summer, under the conditions which exist in this climate, cause congestion and interrupt the blood in the proper performance of its functions, causing fever. It is probable that the micro-organism found in connection with this disease is caused by the effects of these climatic conditions

on the circulation. Old age suffers under this climate on account of the sudden changes which it bears poorly. The impaired vigor of circulation, assimilation and excretion, which characterize advanced years, and the special maladies most frequent at that time of life, such as rheumatism, cardiac disease, and renal affections, are all augmented by this kind of climate. The diurnal changes in temperature are unfavorable to the aged.

Low, damp, warm climates are those where the altitude is small; are sub-tropical, and marine influences tend to keep the temperature uniform and to remain comparatively high throughout the year; and there is a constant large per cent. of humidity (which with the high temperature means a large amount of vapor of water). Sudden changes in temperature are infrequent, and the range between day and night, and sun and shade temperatures is small. In this climate the evaporation which takes place from external surfaces is small, as in the preceding climate, but as the temperature is high and the amount of vapor of water large, the increase in the temperature of the air taken into the lungs is small and consequently the increase in its capacity for moisture is small. The evaporation from the mucous lining of the lung is small; the residue of salts and the conditions favorable for the exudation of albumen are all lessened where the temperature during the greater part of the year is not far below that of the body and the per cent. of moisture is constantly great. This climate may have either prevailing oceanic or continental winds, and much of its sanitary characteristics depend on these. The meteorological features of marine climates, while they have many in common, some of the most important characteristics are determined by the prevailing winds and the latitude. Here the climate is charged to a greater or less extent, depending upon the amount of oceanic winds, with chlorine and saline matters which act in the capacity of strong antiseptics and disinfectants. As regards the physiological action of sea air upon the healthy organism, the marine climate is usually tonic, tending to promote the processes of nutrition and assimilation, and is at the same time sedative in character. It is the most exhilarating of all climates; and while it aggravates some diseases, is generally prophylactic. It is

unfavorable to those suffering with diseases of the kidneys on account of the large amount of moisture constantly present, which throws the increased elimination of water and organic matter upon these organs; it however possesses advantages over the low, damp, cold climate on account of the less frequent decided changes and abnormal departures in temperature. The conditions which prevail in this climate may be summed up as, in a great measure, preventive in effect upon the diseases of the digestive organs, particularly when the trouble is with the stomach and bowels, but where the liver is involved its effects are unfavorable, and its tendency is to cause diseases of this type. Cutaneous diseases are excited by the large amount of moisture charged with irritating salts; most cases of rheumatism are benefitted except when of an inflammatory character; pulmonary phthisis and other diseases of the respiratory system are not aggravated and, as a general rule, the small temperature changes and other climatic conditions are favorable to their treatment, the antiseptic effect of the chlorine is a potent factor, particularly in phthisis. The generalizations reached by Drs. Bowditch, Buchanan and others, to the effect that pulmonary phthisis is most frequent in low, damp localities, will not apply to this character of climate, for here we find a relatively small mortality from this disease, being only about one-half the average, as given by the best authorities, for the world.* This climate is beneficial to those who are debilitated from overwork or long continued strain apart from actual illness. The equable and bracing conditions are very favorable to young and growing children, and promote healthy and normal physiological development. The equable and moderate warmth, combined with its sedative influences and its properties of stimulating tissue change and the riddance of morbid deposits, make it very favorable for the aged, and life is prolonged far beyond the average under such a climate. I have found in my investigations in different climates that the number of people who die at advanced age is greatest in this character of climate. The conditions are

* Flint, Practice of Medicine, 6th edition, page 195, gives the average deaths for the world from this disease one-seventh of all deaths, while here it gives one-fourteenth.

such as to give the greatest vigor of circulation, assimilation and excretion, which the aged so much need, and which benefit the young.

High, dry climates are those of considerable elevation, and, on account of the elevation, are comparatively cold, particularly at certain seasons. Prof. Dr. J. Hann has determined that one-half of the vapor of water of the earth's atmosphere is below an elevation of 6,000 feet, and eight-tenths is below an elevation of 10,000 feet.* The percentage of saturation is small; constant evaporation takes place from the external surfaces of the body, and a large amount of the non-volatile salts as well as organic matter in the system are carried away through the skin. This leaves the amount of salts which may be deposited on the mucous lining of the lungs considerably reduced, and besides this, even with low temperatures at high elevations, the evaporation caused by the increase in the temperature of the air inhaled, is not great because of the decreased capacity of the atmosphere for moisture in elevated regions. The organs of the body at high elevations adapt themselves to the conditions which surround them, and the capacity of the air inhaled for moisture is the same for the same temperature in the lungs as externally. Very little evaporation takes place from the lining membrane of the lungs, consequently there is very little if any deposit of the non-volatile salts; first, because of the excessive evaporation from external surfaces and, second, on account of the small internal evaporation. At high elevations there is at all times a large proportion of sunshine, with its deoxidizing and purifying effects. The conduction of heat from the body through the agency of moisture is at a minimum, even at the most extreme season. Decided changes in temperature are frequent and the diurnal range is generally large, but these are not magnified by the conduction of heat from the body as in low, damp, *cold* climates, and consequently the effects are at a minimum for the difference in temperature recorded. These climatic conditions present very few of the features which aid in the development of the diseases of the respiratory system; the conditions which favor the

lodgment and growth of the micro-organisms in the lungs are not developed. This is the most favorable climate for the treatment of lung diseases, except in cases complicated with nervous troubles which would receive the greatest benefits in a low, damp *warm* climate of the extreme type. Diseases of the nervous system are aggravated by the decided changes in temperature which take place; diseases of the kidneys are in a great measure prevented by this climate; inflammatory rheumatism is generally improved. This climate is severe on old age on account of the sudden changes, and also the cold during the winter season which depresses those in whom the circulation is feeble; it develops a quick and nervous disposition in the young, and is unfavorable in cardiac troubles on account of the sudden changes and the large diurnal ranges in temperature.

In the middle-aged, when the system is in a normal condition the organs readily adapt themselves to climatic changes, but with the child and the aged, as well as those who are afflicted, changes of climate should receive careful consideration. Those who are subjected to conditions of climate which tend to cause disease should use every precaution to counteract the effects by proper clothing and diet, as well as the use of medicines, and also by avoiding the unnecessary exposure, more or less of which is witnessed every day.

Texas presents each of the three conditions of climate, in well defined types. The Northeastern portion of the state has a medium of the low, damp, *cold* climate. The immediate coast region presents the most perfect class of the low, damp, *warm* climate, where temperature changes and departures are slight, and rarely excessive or abnormal. The winds for ten months of the year are, except with occasional interruptions, from the Gulf of Mexico, and are from the same source for more than one-third of the time during the remaining two months of the year. There is a large amount of sunshine throughout this district, notwithstanding the heavy precipitation over the Eastern portion. The elevated regions of Western Texas are a good type of the high, dry climate, and a medium of this character of climate. All Texas, except the extreme West, has for eight months in the year a South wind from the Gulf of Mexico, which carries coolness and comfort at the very season when cool-

*Distribution of Aqueous vapor of the Atmosphere with increase of Altitude, Zeitschrift Qest. Met. Gessell, 1874, pp 198-200.. IX.

ness is most needed. *This, as already referred to in connection with the coast district, plays an important part in Texas climate; it gives the coast region one of the most perfect of climates in so far as healthfulness is concerned; it makes the Northern portion of the state one of the mildest of the low, damp, cold climates, and carries its salubrious effects far to the westward over the high, dry climate of that part of the state.

The distribution of diseases in Texas conform closely with the climatic conditions which influence the causation of disease, as discussed in this paper. Certain diseases of the respiratory system—pulmonary phthisis, pneumonia, pleuritis, bronchitis and asthma—are most frequent over the Northern portion of the state and decrease in concentric circles with the

Northeastern corner as a center towards the Gulf and the elevated regions of West Texas. Diseases of the nervous system are most frequent over the Northeastern portion of the State; are some less over the Northwestern portion, and are least frequent over the immediate coast region. Diseases of the kidneys are most frequent over the Eastern portion, with a slight decrease Southward, and a marked decrease toward the West. Diseases of the digestive system are most frequent over the Northeastern portion, and decrease toward the South and West. Cardiac troubles are least frequent over the immediate coast section, and are most frequent over the Northeastern portion. Malarial diseases are confined to the Eastern portion of the State, but are seldom met with along the immediate coast.

HYSTERIA: CEREBRAL MANIFESTATIONS.

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Hysteria, misnamed, ill-defined, capricious and fleeting, has long been the subject of medical thought and inquiry, and yet to-day remains well nigh as imperfectly understood and as indefinite in its pathology as ever. Its nature, habitat, causation and successful treatment are still elusive—irritatingly, exasperatingly so. It is known to require for its production a certain type of organization, yet the physical features of this type, the physical basis of the disease, are still but vaguely outlined. In its essence it is a morbid state of the brain. It is essentially a morbid state rather than an active disease. It is an abnormal type of structure, a morbid functioning tendency, which either in itself may constitute the disorder or be superadded to active diseased processes. It has a connection with the uterus only in name, no further. The brain is its habitat and the nervous system the field of its active operations. The type of

brain is its essence and furnishes its potentiality. Frequently if not inherited, it is found in individuals in whose organization there is a preponderance of the emotions, a want of mind equilibrium, a development of sentiment and the affective propensities at the expense of capacity to deliberate and choose. The disease is most active in the sex whose place in the economy of nature and whose work in the perpetuation of the race necessitates a preponderance of emotional development. It is seen perhaps twenty times more frequently in women than in men. All degrees of its development may, however, be seen in man and in as multitudinous variety. The type of such men is womanish in emotional development and lack of mature deliberation. It is most active at that age that is accompanied by the greatest degree of instability of nervous tissue, viz., the period of its most active growth and development, the period of pubescent and adolescent change. Fully 75 per cent. of all cases (Gowers) show the first active symptoms between the ages of ten and thirty years, and almost one-half of these begin between the

*Texas Monsoons, by Prof. Mark W. Harrington, Chief of U. S. Weather Bureau, published in Bulletin of the Philosophical Society of Washington, Vol. XII., pp 293-308.

⁺Medical Superintendent Columbus State Hospital.

ages of fifteen and twenty years. Being in its essence a developmental peculiarity of the nervous system, and particularly of its central organ, the brain, it naturally has such relation to other disorders of the system as the nervous system has to other tissues and organs of the body. An imperfectly or peculiarly developed nervous system will almost inevitably be the cause, or at least the accompaniment, of imperfect development elsewhere.

The organs of reconstructive metabolism are often imperfectly developed in the same individual. The capacity to assimilate nourishment is limited, and there is a want of stored up reserves of nutritive material. This limited recuperative power is particularly marked in the central nervous system. The nervous elements are readily exhausted and do not readily recuperate.

So also are the organs of life reproduction often defective, and it is this fact that, to my mind, has led to the belief in some mysterious connection between diseases of the sexual system and the manifestations of hysteria, and that has ascribed the development of the latter to diseased conditions of the former. The truth is they are both evidences of the same dyscrasia, and, as the nervous system stands in the relation of a stimulant to the development of the other tissues and organs of the body, it is oftener true that structural defect in it is the origin of the structural peculiarity or deficiency in the sexual apparatus. Still oftener it is doubtless true that neither has any causative relation to the other. In fully one-half of all cases of hysteria there is no active disease of the sexual organs of any form or degree, and in many of the remainder the disease is an incidental one, one that has no causative relation to the hysterical phenomena, and whose removal will not materially influence their progress. In a few cases there is unquestionably reflex irritation from local disease here and elsewhere, whose removal may very favorably modify or wholly remove active hysterical phenomena, but these are, after all, the exception and not the rule. Laryngeal catarrh may accompany and influence the development of hysterical aphonia, a hysterical joint may be the outgrowth of arthritic inflammation, and so may hysterical symptoms of the sexual system be accompanied and even deter-

mined in character by gross disease in some part of this system, but it would be just as philosophical and just as effective to attempt to cure the hysterical state, of which purely functional aphonia is the expression, by ablation of the larynx, as to hope to cure it by removal of the uterine appendages when its manifestations are seen in functional derangement alone of these organs.

The brain manifestation of hysteria may be divided into two general classes. The first is that class in which the brain disorder is simply a predisposing but necessary factor in the development of the phenomena of the disease. The active symptoms are alone seen in disordered function of some other organ. There is a nervous dyspepsia, a hysterical joint, aphonia, ovarian tenderness, cardiac disturbance, or some disordered function of some special sense. In these the active symptoms are the disorder of the special organ, but the primary and essential element in the development of the disease is, after all, the peculiar brain state of the individual. In this sense the hysterical manifestations of the brain include all hysterical manifestations in all other organs, and, strictly speaking, there can be no hysterical symptoms of any organ without a morbid brain condition accompanying it.

Disorders of the special senses, anesthesia or hyperesthesia of the nerves of smell and hearing especially; sudden blindness, contraction of the visual field, variations in the color sense, loss or perversion of taste, or actual hallucinations of these senses; hyperesthesia or anesthesia of the fifth pair, face ache, tic convulsif, affections of the vagus, spasm or paresis, aphonia, spasm of the glottis, accelerated or diminished respiration, loss of speech, palpitation, disorder of digestion, esophageal spasm or paresis, vomiting, local anesthetics or hyperesthesias over various areas of the body, joint contractures or joint pains, paralysis of spinal origin, ichuria or polyuria—this is a simple enumeration of a few of the forms that these secondary symptoms may take. In the limits of this paper we cannot do more than partially enumerate them. The chief point to remember is that these may be purely hysterical or be complicated with actual organic disease. In the latter case the local disease probably determines

the direction of the hysterical manifestations, but does not originate the state of the brain of which they are the local expression. In every such case, however, all disease should be looked for carefully and every test of its presence exhausted. Never dismiss any case with the assumption that it is nothing but hysteria, because hysterical symptoms are present. The type of brain is one feature to be considered, the presence or absence of organic local disease superadded to this is another element just as important to the well-being of the patient. They may coexist, and the presence of one should never lead you to exclude the other.

We turn now to the second division of the subject, viz., hysterical manifestations limited to the brain functions directly. These may be divided into two classes, the psychic and the somatic phenomena. The former are probably more frequent and more prominent, although the latter accompany many forms of brain disease. The psychic phenomena accompany many forms of mental disorder. They are almost uniformly present in pubescent and adolescent insanity, often in the insanity of pregnancy and of the parturient state, and in all forms complicated by sexual perversion or excitement. The hysterical manifestations are superadded to the insanity, and by no means constitute the disease. Time after time I have found it necessary to correct the impression that because hysterical symptoms were present the disease was simple hysteria, and within the patient's control. Mental derangement does seem in some instances to grow out of the hysterical brain manifestations by gradual steps where it did not before exist, and the dividing line between them is sometimes hard to determine. There is no rule by which the question can be decided. The point where a structural peculiarity develops into active disease, when we have nothing but the disordered function to guide us, is hard to determine. In hysteria major there is always a time during the progress of the fit when the patient is unquestionably insane, although temporarily so. There are often hallucinations and delusions, delirium with maniacal violence and storms of emotion. Acute melancholia is not infrequently complicated by hysterical phenomena, especially when occurring in young people, and it is

well to bear this in mind. I have known suicidal impulses to be overlooked because the patient was believed to be simply hysterical. Hypochondriacal melancholia is very frequently accompanied by hysterical symptoms, and it is often extremely difficult to differentiate the symptoms of the two disorders and to refer each class to its proper origin, to distinguish those arising from the peculiar brain state from those due to actual local organic disease. Delusions relating to particular organs or functions may have an origin in actual organic disease of these organs, and yet the patient may much exaggerate the consequent disorder, magnify its importance and present the well-known features of the hysterical state. The self-consciousness of the hypochondriac is very similar to the self-absorption of the hysterical, and it is often impossible to distinguish between them. Speaking generally, we must look for the proof of hysteria in the state of the individual outside of the symptoms connected with the local disease. The fact that hysteria is a general state rather than a local disease will assist greatly in the identification of its symptoms in all forms of mental disorder.

Outside the domain of strictly psychic disorder there is scarcely a disease of the general nervous system that hysteria may not complicate. As the patient approaches puberty, infantile hemiplegia, cerebral tumors, tubercular meningitis, multiple neuritis, chorea and epilepsy are frequently complicated by such well-marked hysterical phenomena as aphonia, phantom tumor and hysterical convulsions. This fact renders a correct diagnosis extremely difficult in some cases, and it is only by comparing the symptoms present with the evidences of the organic basis for them, testing their reasonableness and regularity and putting them to the proof, that the correct conclusion can be reached.

It cannot be necessary to discuss before this society the well-known symptoms of hysteria. They are either continuous or paroxysmal. They simulate every known disease and usually pattern themselves after such as are within the experience or observation of the patient affected. Imitation is one of the chief sources of the phenomena of the disorder, and faulty imitation is our chief diagnostic weapon. Inconsistency at some point in its manifestations with what they pretend to be is

their predominating characteristic. The rationality of their evolution must be the test of their character, and we must therefore call to our aid every law of the symptomatology of the known organic diseases and compare these phenomena with them. These laws must be our arbiter.

The pathology of hysterical manifestations of the brain, as has already been said, is very indefinite. It is, however, an interesting question, and, in the light of recent investigations into brain histology and the pathological anatomy of the acute insanities and of the study of the fatigue of nervous elements, it is beginning to assume a basis a little more definite than mere conjecture. At the risk of incurring the ridicule of our surgical friends, who believe only what they can see and feel, or think they do, I shall attempt an outline of my idea of the pathology of this uncertain symptomatology.

The doctrine of the neurons, as the essential anatomical basis of all nerve and mind activity, is becoming as well established as we can well hope such a difficult problem as the relations of psychic phenomena to physical elements to admit. Neurons are the true nervous elements in nerve tissues, and are made up of nerve cells and their connections. These are grouped into complex structures by association and commissural fibres, forming "groupings and clusters of cells, complexes of associated unilateral and bilateral clusters," as they have been termed.* Bear in mind, now, that this is not theory. The researches of Golgi and Ramon y Cajal, of Andriezen, Bevan Lewis and Batty Tuke, of Meynert, Obersteiner, Fritsch and Hitzig have fully demonstrated the anatomical relations of the nervous elements as far as we shall attempt to describe them here.

The brain cortex is divided dynamically and functionally, rather than by the shape or size of cell elements, into three or four layers; the first, immediately beneath the pia mater, is the molecular; the second the ambiguous; the third the layer of large pyramids, and the fourth the polymorphous. The molecular layer has risen much in importance through recent investigation. In Meynert's time it was supposed to be composed in great part of basis substance and connective tissue. Now not

fewer than ten different structures can be discovered in it. With the ambiguous layer beneath, it receives the distribution of the terminal filaments of the upward projection system, the sensory fibres from the special senses, the integument and the soma in general, coming, of course, through the file, the olfactory and optic radiations, and the sub-centers of cell elements in basal ganglia, bulb and cord. On the other hand, the apical tufts from the large pyramids of the third layer beneath reach upwards, and spreading out encompass the nervous elements in these two layers from below, while the basal processes of these large pyramids are connected with discharging lines outward. This anatomical basis, when comprehended in all its complex detail, affords ample mechanism for all forms of nerve activity that result in movement and conduct. The complexes of cortical neurons are so disposed as to receive all the incoming nerve currents of sensory origin, and to "elaborate from these sensations still more complex," ultimately "attaining to such physical states as we denominate cognition and recognition, comparison, discrimination and judgment, and which finally issue as the reactions of conduct."* Andriezen, an assistant medical officer at the West Riding Lunatic Asylum, in England, has recently given a series of demonstrations of anatomical and pathological specimens from slides prepared by himself that fully corroborate these statements. Clouston, medical superintendent of the Royal Edinburgh Asylum, Scotland, has also presented a most interesting series of slides showing the incipient cell and vessel changes in the primary stages of mental disease and in those more advanced. The forms of disease in which these were found were also described, and a rational relationship established between symptoms and pathological change. For instance, the primary change in the brain cell is shown by a swelling and an increase in the staining of protoplasm, nucleus and processes by the reagent, and these changes are connected with the stage of increased cell activity, as in the incipient stage of paresis or epilepsy. As the pathological process advances, the cell shows pigmentary or granular degeneration, diminished staining of protoplasm, nucleus and processes, and a complete de-

* Andriezen, *Journal of Mental Science*, October, 1894.

* Andriezen, *Brain*, Winter, 1894.

struction of the more delicate of the latter, and these changes are connected with such symptoms as amnesia, incapacity for attention, easily induced fatigue, insomnia and muscular weakness and tremor.

The theory of normal fatigue, psychically meant, and cell recuperation, is also worthy of a moment's notice. The brain cell, or neuron, receives its restorative elements from two sources—from the intra-cellular nutritive material, stored up during sleep and available during waking hours, and from the lymphatic food material circulating in the lymph, and capable of use only at a certain fixed and comparatively slow rate. When this stored up nutriment is consumed a psychic sensation of fatigue ensues; the individual rests and the store is replenished. In diseased states, or during the circulation of alcohol in the blood, for instance, the cells cannot rest, but are spurred on to a degree of activity which, in its inevitable consumption of substance, results in excessive fatigue, exaggerated in the same degree that the stimulation was excessive. This is morbid fatigue, such as impairs the capacity of the cell to recuperate by the assimilation of nutriment when opportunity does present, a state very similar to that seen in the neurasthenic, and a condition that is present in many cases of hysteria. The cell structures in the hysterical are readily exhausted. They can not withstand any extraordinary demand on them. Nerve cells must be considered to have an individual variation as well as any other organs in the body. Neurons have a three-fold character, as nutritive and doubly connected elements. They must be capable of recuperation and the conversion of nutrition into stored up energy; they must be able to receive impressions and capable of the regulated discharge of this stored-up energy. The activity of these neurons consists in an excitation, rise of tension within the cell, and discharge with reduction of tension, and this is the nervous basis of what, psychically, we call a sensation. Now, this excitation may be faint or vivid in intensity, and the neuron upon which it is projected may respond readily or slowly. In the hysterical state there is a quick excitation and an explosive discharge. The mechanism, while unduly sensitive, readily excited by impressions reaching the cell from without, cannot

store up the energy so imparted to it, but it is released readily and without due rearrangement.

This variation in the reception of sensations and the discharge of energy consequent upon it, is similar to the pathological change in the incipient form of disease of these structures, where it has been shown that swelling and softening of the fine connecting fibres between nerve cells—the very first changes that can be detected in the alcoholic, for instance—is correlative with diminished sensitiveness to impressions and the slowness of reaction time in such subjects. In the one instance we have a form of cell structure that does not admit of high or fixed tension, but releases energy fitfully and without order; in the other there is a slowness in the rise of tension in the cell because the store of nutrition upon which it should call is not within its reach, or the line of its functional stimulation interrupted. Combine these two conditions and you have, to my mind, the pathological basis of the hysterical state. There is in it a cell structure such as we have described, and there is often superadded an excessive fatigue that comes from the failure to adjust the excitation of the nervous elements to their supply of nutritive material.

The treatment of hysterical manifestations of the brain requires nothing peculiar. The indications are rest—as complete rest as is possible of the exhausted nervous elements,—and the supply of proper nutritive material. This involves proper adjustment of the environment, the removal of all sources of undue strain or any exaggerated demand on the system, the diversion of cell activity to other portions of the nervous mechanism, the removal of all undue excitement, reflex or otherwise, and the use of every restorative agency within our control.

Locomotor Ataxia.

Dr. Sydney Kuh concludes (*Chicago Med. Rec.*) that the brain is diseased in the majority of, and probably in all cases of locomotor ataxia, that quite a number of the most constant symptoms of this disease are very probably and some of them surely not of spinal but of cerebral origin, and that locomotor ataxia is certainly not merely a spinal but rather a disease of the entire central and peripheral nervous system.

IS CANCER OF THE STOMACH AND ABDOMINAL ORGANS THE
MEDIATE CONSEQUENCE OF A CONTUSION? *

DR. LITTAUER.

September 1, 1887, a beer wagon collided with a horse-car, swinging the brake against the chest of the driver, L., who was thrown from the platform. He complained of pain in the chest and formication in the feet and right hand. He was taken to a hospital, ice-bags were applied, and September 7 he was discharged improved. He was at this time 29 years old, and had been in good health for some time, though, taking advantage of the presence of a physician to prescribe for his child a few weeks previously, he had asked advice with regard to some digestive disturbances which the physician considered gastric catarrh.

November 30 the railroad physician certified that he had suffered a contusion of the chest and, in consequence, a shock of the general nervous system.

August 2, 1888, the same physician testified that the gait and speech were uncertain and the latter slow; that the patient was dull and the countenance imbecile; that he was incapacitated for work, and had chronic gastric catarrh, the lungs having suffered from the contusion. From August 14 to September 10, L. was treated in a hospital with thermal baths. The diagnosis was confirmed, with the additional note of apical catarrh of the lungs. On December 1 the railroad physician certified that the condition was on the whole unchanged, and advised treatment at the Charity, to which the patient was admitted January 7, 1889, and where he remained till March 9, 1890.

At least three physicians examined him at this hospital and agreed in this diagnosis already made. Digestive disturbances were noted, though not in detail. During two months of the fall of 1889 the patient had treatment at the Medico-mechanical Institute of Berlin but without improvement, as attested by the physician in attendance.

December 3, 1889, there were noted poor sleep, hebetude, vomiting of mucons when lying on the back, and a disposition to cry. After January 16, 1890, treatment was directed especially toward the digestive symptoms.

After leaving the hospital, L. was sent to the country, but did not improve, and on July 31 the physician at the Charity certified that he did not consider further sojourn in the country, or other therapeutic measures as likely to cause improvement. In October, 1890, he recommenced treatment directed toward the gastric disturbance.

December 20, 1891, Dr. L., the physician at the Charity certified, that the condition was, on the whole, the same, the patient being anæmic, badly nourished, with tenderness in the gastric area and with renewed pulmonary catarrh. He thought that, while the prospect for genuine improvement was slight, it was possible that the patient might become able to do light work after prolonged dietetic treatment with occasional lavage. On his advice, L. was admitted to the Augusta Hospital January 18, 1892, where he remained till March 22. On his discharge it was stated that he had a chronic gastric disorder and was improved. Professor Ewald, however, on April 18, 1892, certified that improvement had not occurred. In contradiction Dr. L. again certified, May 4, 1892, that a marked improvement had occurred, the color of the face being healthy, the tongue clear, the physical powers increased while the pulmonary catarrh had subsided. In opposition to the physical evidence, L. complained of severe pains in the stomach, of disturbed digestion and great weakness. Dr. L. thought that the patient was simulating or exaggerating his symptoms, and considered him fit for light work, indoors or out. Another physician, on August 6, 1892, certified that L. was completely broken down, his nutrition was miserable, his complexion grey, he also noted hebetude, hyperæsthesia of the skin and phy-

*Translated from the Quarterly of Forensic Medicine and Public Sanitation for April, 1895, by A. L. Benedict, A. M., M. D., Lecturer on Digestive Diseases, Buffalo Dental College.

sical depression. September 9, 1891, L. was again received into the Angusta Hospital where he remained until September 20. The assistant physician noted severe pains in the gastric area and loins, as well as marked sleeplessness.

November 11, 1892, the physician who had given the certificate August 6, noted that emaciation had been progressing for some time, that a malignant neoplasm had developed in the intestine of plainly carcinomatous nature, and that the patient could live but a short time. On November 28, he certified that the cancer had no causal relation with the accident of September 1, 1886. The patient died the next day.

Autopsy.—Atrophy of the fatty tissues of the heart, brownish-red muscular tissue, whitish opacity of the endocardium, of the left ventricle, upper lobe of right lung distended with air, emphysematous at margin, four liters of serous fluid in the pelvis, numerous large cancerous nodes on the peritoneum, right kidney adherent with surrounding structures through chronic inflammation of cancerous nature, kidney of normal size, pyramids partly atrophied, so that their place was taken by "gulfs" (hydronephrosis); all the remaining abdominal organs more or less firmly united by cancerous growths; diaphragm riddled with cancer and forming a membrane one c.m. thick adherent to the entire upper surface of the liver; cavity of the stomach much diminished in size; complete cancerous degeneration of pyloric area and vicinity of the great curvature; cancerous growths of the peritoneum covering its surface and uniting it to the whole posterior surface of the stomach; pancreas infiltrated with cancer, numerous cancerous nodes of different sizes on the intestine; mesentery and great omentum, lowest part of rectum, to a length of 10 c.m. thickened with cancer so as to form a firm tumor.

Lengthy opinions follow from the physician in attendance and from a Prof. F., reviewing the history in detail and attempting to show that the accident had no causal connection with death, either immediately or mediately. The examination was undertaken at the request of the Imperial Insurance Officer.

The opinion of the writer differs from that of Prof. F. in assigning an indirect causal relation to the original accident.

Cancer is at first a local disease as is admitted by both those who consider it a dyscrasia and by those who consider it a germ disease. In the light of modern discoveries, even though we do not know the exact cause of cancer, it seems that a relation can be established between injury and malignant disease. According to Langerhan's Compend of Pathological Anatomy, 1891, a chronic inflammation of an organ or part of an organ, has an ætiological significance in determining the development of cancer. It has been repeatedly observed that from a scar the result of injury, or from an old ulcer of the lower extremities, or a chronic gastric ulcer, cancer has developed. Cancer of the lip predominates among men who smoke pipes, the so-called chimney sweepers' and parafine workers' cancer arises in the same way from definite, repeated, mechanical injuries, and in the digestive tract, the localities of smallest calibre and the transitions of mucous membrane are by preference attacked by cancer. In the latter locations, (Rindfleisch) the brunt of mechanical impact is physiologically borne.

Waldeyer expresses himself as follows: "I have always noticed in my examinations that, in the most recent zone of a cancer, there is almost as rich vascularization of the tissue, with aggregation of colorless blood vessels as occurs in inflamed tissue. Can it not be that the increased nutrition of the tissue and the resulting sponginess of the connective tissue substratum prepare the way for the growth and extension of the cancer? Can not, in the same way, chronic inflammatory processes of local nature, for example, repeated inflammations, finally pass over into carcinomatous degenerations?"

The late professor of surgery in Heidelberg, Professor Weber, said: "All things considered, the heterologous neoplasms probably often arise as plainly local diseases from repeated inflammations of not very high degree, without our being able to make a positive diagnosis."

The utterances of Billroth are also instructive. His pupil, Alexander von Winiwarter, quotes him thus: "In most cases the exact cause for the development of carcinoma are not known, but a whole series of observations exists confirming the appearance of cancer following local irritation, the new growth developing in soil already altered by a pathological process.

I myself have noticed a local inflammation at the point of development of carcinoma in twenty per cent. of all cases. I may note as examples of the development of cancer from irritated localities cases in which carcinoma has occurred on the site of an ulcer that has matterated for years, in a sinus, a fistula, in chronic inflammatory foci. . . . Single or repeated traumatic irritations can, under certain circumstances, afford an impetus to the development of cancer."

Professor Gusserow, without reference to theoretical considerations, speaks as follows: "Various local diseases of the cervix uteri appear to be of the greatest significance as predisposing causes to the development of cancer. In this category belongs long continued catarrh of the cervical mucous membrane, with the formation of erosions."

Professor von Ziemssen, referring to the occurrence of cancer of the larynx, says: "The cause is quite obscure. In only one case out of ninety-six traumatism—fracture of the thyroid cartilage through an attempt at strangulation—had preceded neoplasm by a few months."

Stoerck of Vienna contributes a case of cancer of the epiglottis in a man fifty-two years old, in which the patient attributed the trouble to swallowing a fish bone. The bone had remained for a long time before it could be grasped.

Of the symptoms of laryngeal cancer, hoarseness is by far the most constant, the earliest and the most permanent. According to von Ziemssen, hoarseness preceded other symptoms by many years, for example, three, four, five, and, in one case, twenty-six years. A prodromal stage of one or two years seems to be the rule. Do not these facts signify that chronic catarrh of the larynx precedes cancer and conduces to its development?

Professor Luecke says: "I believe by all means that we have every reason to inquire for the local inflammations that engender tumors. They possess real ætiological moment with respect to the development of tumors, yet they cannot be of immediate diagnostic value because certain inflammations do not always call forth certain tumors. Repeated as well as single irritations by pressure, friction, or the flow of secretions are given as the causes for the most various benign and malignant tumors.

After weighing carefully the testimony of Professor F., and again referring at length to the history of the patient L., the writer reached the following conclusions:

(1) By the accident, on account of the contusion of the chest and gastric area by the brake, processes were originated through which, in course of time, cancer could develop in the stomach and neighboring internal organs.

(2) In the documents no account is taken of processes or anatomical changes from which one can decide upon an idiopathic origin of cancer in L.'s case.

(3) By the continuity of the processes from the moment of the blow of the brake on the anterior chest wall and gastric area to the death of L., it is highly probable, from a medical standpoint, that a mediate causal connection obtained between the accident on September 1, 1887, and the death of the patient. The degree of probability cannot be stated mathematically, but, to myself, this probability amounts to a certainty.

Obstruction of the Bowel Tested by Electricity.

Althaus (*British Medical Journal*,) reports a case of a man fifty-four years old, who for three months had suffered with obstinate constipation. At the time of coming under observation the bowels had not been moved for ten days, and the abdomen was distended and tender. The appetite was lost, and a condition of collapse existed, with sunken face and small, feeble pulse. The introduction of the long tube proved unavailing, and electric treatment was resorted to. An insulated sound with a fine metallic end, was introduced into the rectum, and a moistened conductor applied to the abdominal parietes, chiefly in the region of the sigmoid flexure. Through this circuit a primary faradic current was passed, and its force gradually increased until the patient experienced a decided feeling of vibration in the bowel. In the course of the day a copious intestinal evacuation ensued, with wonderful relief to all the symptoms. During the next two days the bowels acted ten times, and in the course of a week the patient appeared quite well.

A second case, in a woman fifty-seven years old, is cited, in which a like result was obtained from similar treatment. (*The Medical News*.)

MALARIAL HEMATURIA.

CHAS. E. CATCHINGS, M.D., WOODVILLE, MISS.

To my mind there is no disease on earth so much dreaded by the inhabitants of malarial districts as this "Monster Hematuria." It may be defined as a miasmatic acute infectious fever; characterized by an initial chill, with manifestations of an inflammation of the whole kidney structure, especially in the mucous membrane, which is as pathognomonic as is the membranous deposit upon the tonsils and fauces in diphtheria. It attacks the white man, especially the laboring class, more often than the negro, who is capable of taking it on and throwing it off without any deleterious effects. It prevails throughout the whole southern climate, especially in localities abounding in lakes, stagnant water courses, swamps, etc., which are conducive to vegetable decomposition and miasmatic fevers. There are probably as many forms of this type of malaria as there are pernicious forms of malarial attacks.

History.—Malarial disease, accompanied with vomiting of black bile, with petechia and with hemorrhages have, from time immemorial, been frequent and fatal in the warm, marshy countries bordering on the Mediterranean and Black Seas. They appeared with such dangerous and putrid symptoms as not only to have been called pestilential, but to be confounded with the plague itself. Rome was often afflicted with malignant malarial fever. This seemed to be due to the marshes and stagnant pools around the city for, when drains and common sewers were laid and the Pontine marshes drained, Rome became a healthy city. In Alexandria there seemed to be a similar disease that was very much dreaded in the Autumn after the recession of the Nile. Præser Alpinus says, "It began by nausea, sick stomach, vomiting of bile and passage of bloody urine with jaundice. Dr. Livingston speaks of this dreaded disease in his 'Travels in Africa;' and all know of its fatality in the West Indies, Central and South America.

One of the most remarkable circumstances connected with hematuria is that

it occurs as an endemic disease in some countries. In the Isle of France three-fourths of the children are affected with hematuria at some time or other. Among the predisposing causes are bad hygiene and sanitary condition, improper diet, etc. The chief cause is said to be due to the parasite hematuria discovered by Bilhorz. It is an elongated, soft-skinned, bi-sexual entozoon, three or four lines in length, of the trematode or fluke kind. It inhabits the branches of the portal system and the minute veins of the pelvis, of the kidneys, uterus, and bladder. When a patient lives in a marshy country there is generally an overplus of malarial poisoning in the system, a chronic malaria in the form of "chronic chills." The system has been affected with these malarial germs, the plasmodia of Laveran, and your patient has been using every patent "chill tonic" that he could find in the drug store, and God knows what else, only adding insult to injury.

With reference to the pathological anatomy the profession is not united. Our text books give very little on hematuria. This is plain enough because all our standard authors live in the North where they never see a case; hence we have to get it from our own observations. We find that the color of the skin varies from a light to a dark yellow according to the case, and is of a perfect uniform tint. Everywhere the stomach is perfectly sound when the patient has not formed any drunken habits. The gastric juice is green, limpid, or contains lumps of green matter exactly like chopped spinach. We find the red blood corpuscles in the urine, but some deny their presence and say that we find only the hematin, and that we have hæmoglobinuria or urine containing blood-coloring matter. I have examined the urine under a magnifying power of 430 diameters. The urine was found to contain numerous casts of tubuli uriniferi. The casts were filled with crystals and fragments of granules of the coloring matter of the blood. I also found a few altered blood corpuscles, but if they had ever been present in large

numbers they had been destroyed by a mixture of the bile and urine. There is no doubt but what we have extreme hematuria in the kidney structure. The capillaries become so engorged with this poisoned blood containing the germs, plasmodia of Laveran, that they may rupture. Oxidation is interfered with and, of course, will cause degeneration.

After death you find the exterior of a golden color, the *liver* enlarged and of a slate color on the surface and a deep bronze color within. *Gall-bladder* is distended with greenish, almost black bile. *Spleen* is enlarged and filled with black pigmentary particles similar to those absorbed in the liver, and it has all the appearances of a malarial spleen. *Stomach* is filled with a fluid similar to that found in the gall-bladder. *Kidneys* are found to have some slate-colored spots on the surface, and they are also greatly congested and of a dark-purplish appearance. The *blood vessels* are filled with coagulated blood. *Bladder* contains a large amount of bloody urine.

The patient first begins to look anæmic and to have chills, but this he does not pay much attention to; probably walks about while he has a chill. Finally he goes out and voids bloody urine, and then sends for a doctor. When you get there you find your patient with a haggard expression about the face; the sclerotics of a yellow or golden color, and the skin nearly the same color. Patient will tell you he has had a hard chill and then passed bloody urine. He then has high fever and is very restless; bowels constipated, and, probably, the kidneys acting very slowly. The liver is engorged and spleen enlarged. Then you have a genuine case of malarial hematuria, and it is the place for you to show your skill as a physician.

I do not think a genuine case can be confounded with anything else, if the physician has ever seen a case before. It comes nearer yellow fever than anything else.

Prognosis is generally guarded, but if seen in time and properly treated the case will recover. Uremia is the thing to be feared, but if you get the liver and kidneys to act well there is not so much dread, though I do not believe that a genuine case of hematuria ever got entirely well, for, usually, nephritis develops after the hematuria.

There comes the "tug of war" where Greek meets Greek, and so it is when physician meets physician in the treatment of this dreaded disease "hematuria." I do not remember, but it has only been a few years ago when quinine was considered the sole remedy; to-day we have learned better. I admit that quinine is destructive to the germ—the plasmodium of Laveran. But study the physiological action of quinine and the pathology of hematuria and you will see that it is not indicated. Look! The patient is already depressed and the kidneys in a crippled condition—they are hyperemic. Bartholow says medium doses of quinine cause hyperemia of the brain and depress the heart's action. It acts on the cardiac motor ganglia, and causes feeble movements of the heart and lowers the vascular system. This is just what we don't want. Dr. Elliott, my professor in Tulane University, would preach all day, "Give quinine," but I have learned better, and the man who does give it is not a conservative practitioner. Again, quinine in long continued use will irritate the stomach, and you know that in hematuria nausea is the worst symptom we have to combat. I have seen it really alarming. Then give quinine? No, some will say, give it hypodermically. If you do sometimes produce abscesses. I do not believe quinine is perfectly absorbed when given internally, therefore it must be an irritant. This hemorrhage is what you are trying to stop. If this is so, then you do not want to use quinine, for I do not remember ever seeing where quinine was used as an hemostatic. We all know that hemorrhage is only a symptom in hematuria, and there is not a case on record where quinine arrested hemorrhage. As this is so, we must resort to some other remedy. And now, if you will follow me, I will give you a treatment which I believe every physician from the Delta will endorse, a treatment that I consider the most conservative one—one in which the powers of the patient are supported and this dreaded poison eliminated. And to do this we give something to arouse the secreting and excreting organs—the liver and kidneys—and for this what are we going to give? Is it quinine? No! Is it hyposulphate of sodium? No! Still I was taught by two of the brightest lights of our profession—Dr. Elliott of New Orleans and the illustrious Dr. Sim of Memphis—to give

it. Do I give it? Yes; sometimes; and I have seen what I thought pretty good results from it. But there is one other remedy which I must speak of, a remedy time-honored for a great many diseases, one which we have all had to use. I speak of the "Great Mogul"—calomel. It may be given *ad libitum*, say ten to fifteen grains every hour, until you get the physiological effect. I have seen as high as 100 grains given in five hours. I usually give it in eight or ten grain doses until I get the desired effect, and then follow it with hyposulphate of sodium or this prescription:

Sulph. Magnesia	3 ss
Aromatic sulph. acid, gtts	10
Tr. opii, gtts.....	5

Sig. Take at one dose.

This I give about every three hours for the nausea, and give either cracked ice or water as hot as the patient can drink it, and the patient will soon learn to like it.

As soon as my patient shows signs of improvement I give some diuretic, preferably acetate of potash and the following prescription:

Phosphoric acid (dil.)	3 v
Strychnia nitrate, gr.....	1
Aqua, q. s.....	3 iv

Sig. Teaspoonful every four hours.

The acid has a tendency to arouse the liver to action, and the strychnine acts as a stimulant.

But, in conclusion, let me say, whatever else you do, support your patient and use the eliminative treatment.

WOMEN IN THE MEDICAL PROFESSION.*

LOUISA C. DROUILLARD, M.D., MEMPHIS, TENNESSEE.

From the earliest time since women have taken up the study of medicine, the department of mid-wifery was almost entirely given over to them, but it was not until 1848 that woman entered the field with a school of her own, and entered to remain. In Europe the admission of women to the profession had been widely opposed because of disbelief in their intellectual capacity, in America one is less often permitted to doubt aloud her intellectual capacity; the controversy was therefore shifted to the ground of decorum. While women were allowed to practice mid-wifery it was because it was assumed that that department of medicine did not require the assistance of medical art; that women in labor traversed a purely physiological course and only required the attendance of kindness, patience and natural sagacity, all obtained without scientific knowledge from her own sex; but when the necessity for knowledge was recognized, when men became skilled while mid-wives remained ignorant, the choice was no longer possible and the great welcome of mid-wifery was obliged to

yield to the greater safety of enlightened masculine practice. The history of medical women in the United States may be divided into seven periods.

1st. The Colonial period. During this period of female mid-wifery the medical profession proper of the colonies remained entirely unorganized. Without making inquiry a superficial observer could have almost overlooked the existence of doctors as a special class in the community.

The second period was that of the Revolution. At this time physicians began to travel to Europe for instruction, and during the war their services in the military hospitals, though apparently not very useful to the sick, served to bring the profession for the first time out of obscurity and resulted in the collective observation of disease on a large scale. More than one hundred and fifty years elapsed after the first settlement before a single effort was made, either by public authority or by the enterprise of individuals, for the education of physicians, or for improving the practice of medicine; no medical journal was published until the close of the eighteenth century, and the first anatomical dissection was made in New York,

* Read before the Tennessee State Medical Society, April, 1895.

in 1750. The first achievement of the new-born art and education was the expulsion of "females" from every out-lying province of the profession, and from the world-old traditional privilege as accouchees. It was a harsh return to make for the services rendered to the infant settlement by those valiant mid-wives who tramped through the snow by night and by day to bring into a very cold world the citizens of the future Republic.

After this came a period of reaction. In 1848 a Boston gentleman, Mr. Samuel Gregory, began to protest against the innovation of male mid-wives and, to judge by the contents of the public press, opened a crusade on behalf of the women. Mr. Gregory's protests awoke sympathetic echoes, and some that were not sympathetic, for the President of the British Medical Association said: "I am not over squeamish, nor am I over sensitive, but I almost shudder when I hear of things that ladies now do or are attempting to do. One can but blush and feel that modesty, once inherent in the fairest of God's creation, is fast fading away. You, gentlemen, who know the delicacy of woman's organization, must know that constitutionally they are unfit for many of the duties of either doctor or nurse. May not habit so change that fine organism that sensitive nature of women, as to render her dead to those higher feelings of love and sympathy which now make our homes so happy, so blessed?"

The fourth period was initiated when Mr. Gregory, supported by the popular enthusiasm which he had aroused, succeeded in opening a school of medicine (so called) for women, in November, 1848. The first term lasted three months; a second term began the following April, 1849, with the announcement that the twenty pioneer pupils had not only followed the lectures but had attended about three hundred mid-wifery cases with the most satisfactory success. In the prospectus issued for the second year of the school, Mr. Gregory brought forth a new set of reasons for its support; that in New England there was a surplus female population of 20,000, and hundreds of these would be willing to devote any necessary length of time in fitting themselves for a useful, honorable and remunerative occupation. They could afford, moreover, to give their services at a much cheaper rate

than men, charging about one-third the ordinary fee—thus, five dollars instead of fifteen for attendance on a confinement case. Thus not only would the morals of the community be preserved, but the burden on its purse be considerably lightened by the employment of educated women as obstetricians. As the medical profession has become keenly alive to the lucrative character of obstetrical and gynecological practice, this suggestion that it might now profitably be undersold, naturally aroused the keenest resentment. It was soon reported that the cheaper practitioners were to be prepared by a system of education so cheap as to be absolutely worthless and, unfortunately, the early history of the first medical schools for women entirely justified this accusation. In 1850 the Woman's College of Pennsylvania was founded, and after a long and precarious period it finally rested upon a solid basis.

Period five; the struggle for an entrance into the reputable colleges. Half-a-dozen women, unknown to each other and widely separated, appeared almost simultaneously upon the scene and demanded opportunity to be educated as physicians. The first of this remarkable group of women was Harriet K. Hunt, of Boston. This lady had for several years assumed the responsibility of practicing medicine while yet unprovided with a medical diploma. This was reprehensible, but from a practical stand-point the course seems to have been justified by subsequent events for when in 1847 Miss Hunt requested permission to attend lectures at the Harvard Medical School, her request was promptly refused. After the graduation of Elizabeth Blackwell at Geneva, in 1839, Miss Hunt thought that the times might have become more favorable and in 1850 repeated her application to Harvard. On this occasion five out of the seven members of the faculty voted that Miss Hunt be admitted to the lectures on the usual terms provided that her admission be not deemed inconsistent with the statutes, but when the students heard that a woman was to be admitted they held an indignation meeting and the faculty advised the female student to withdraw, which she did, but she continued her practice, and in 1872 celebrated her silver wedding in the profession.

Elizabeth and Emily Blackwell were led to the study of medicine in a different manner than Harriet Hunt. While still quite young their father died leaving a large family to their support. They wrote:—"When we realized the infinite narrowness and pettiness of the avenues open to women, we determined to open a new door and tread a fresh path." In this determination a new keynote for women was founded. It was in 1845 that the plan of studying medicine became a settled resolution with Elizabeth Blackwell, and she was thus the first woman on the American continent to whom such an idea had come. She applied for admission into twelve medical colleges throughout the country and at last was admitted at Geneva, N. Y. The faculty referred the matter to the students and they decided to invite the courageous applicant. After graduation at Geneva in 1849, the first woman in America of modern times to receive a medical diploma, Miss Blackwell went to Europe and by exceptional favor succeeded in visiting some of the hospitals of both London and Paris. Emily Blackwell was refused admission to Hobart College at Geneva, but was allowed one year's study at Rush College, Chicago. For this permission, however, the college was censured by the State Medical Society, and the second term was denied her. The College at Cleveland, Ohio, permitted her to complete her course, 1852. After this she became a pupil of the celebrated Sir James Y. Simpson of Edinburgh, who gave her the highest praise, as did several distinguished physicians in London and Paris in whose hospital wards she worked. In 1855, the two sisters opened a little dispensary for women which grew into the New York Infirmary. In 1850 Dr. Marion Sims arrived as an exiled invalid from Alabama. With a brilliant, original surgical operation as his stock in trade, he succeeded, with the aid of some generous New York women, in founding the first Woman's Hospital in the world. Now that there was a college in Philadelphia and a hospital in New York, more women entered the profession, but their trials and difficulties to a less determined set of women would have been unsurmountable. These did, indeed, walk by faith and under an overruling Providence.

The sixth period was the founding of

hospitals where women could obtain clinical training. The New York Infirmary in 1854 by the Drs. Blackwell; the Woman's Hospital in Philadelphia in 1862; the Hospital for Women and Children in Chicago, by Dr. Mary Thompson, that pioneer of women in the West; in San Francisco, Cal., in 1875; in 1882 in Minneapolis. In 1865 a school for women was opened in New York City, much against the will of the leading women physicians, as they were anxious for the admission of women into the good colleges, but the colleges would not admit them, not but that the women had loyal friends among the men, but these were in the minority. In 1869, under the patronage of that grand man, Dr. William Byford assisted by other progressive men and by Dr. Mary Thompson, a college was founded in Chicago that has grown from beginnings so small that at one time lectures were given in a building that had been the stable of the Women's and Children's Hospital, and as Dr. Byford, in reviewing the history at the dedication of a handsome new building with every facility, said, "It did have a very horsey odor." This college has borne Dr. Sarah Hackett Stevenson, Dr. Eliza Root, Dr. Marie Kreigler, and many others that are honors to the profession. In Michigan the State University opened its medical department to both sexes. Since this, colleges for women, especially in the West, have received hearty support.

Then came the struggle for official recognition in the profession. In the prolonged debate which followed, woman's cause was defended by many distinguished men with as much warmth as it was opposed by others. The Philadelphia County Medical Society assumed the responsibility of being the first to check the alarming innovation of woman's schools and female doctors. In 1859 was introduced the resolution declaring that any member who would consult with women should forfeit his membership. Upon this resolution the censors declined to express an opinion; endorsement was, however, obtained from a committee of the State Medical Society. The recommendations of this Society were supposed to be mandatory on all the County Societies throughout the State, but the Montgomery County Society, under the chivalrous inspiration of Dr. Hiram Corson, passed a resolution that "females, if properly educated, should receive the same

treatment as males, and that it was not just to deny women admission to male colleges," and after they had, with great perseverance, established one for themselves, to refuse it recognition. In 1870 this Society elected Dr. Anna Lukon to membership. In 1871, when the American Medical Society met in San Francisco, and the female physician question was subjected to a long and eminated debate, Dr. Atlee of Philadelphia, remarked that the opposition to female colleges generally came from the professors or contributors of other colleges. "These woman's colleges now stand in many respects better than many colleges represented in the Association, and give obstetrical and clinical training such as is not given in a majority of the colleges for men. By the rules of our Medical Association I dare not consult with the most highly educated woman physician, and yet I may consult with the most ignorant, masculine ass in the medical profession." In 1881 the first woman delegate was admitted as a member of the State Society of Pennsylvania, and in 1876, Dr. Sarah Hackett Stevenson was sent as a delegate by the State Medical Society of Illinois. Dr. Marion Sims was President that year of the American Medical Association, which met in Philadelphia. By an almost unanimous vote the mighty question which had disturbed the calm of so many medical meetings was settled through the influence of Dr. Jacobi of New York. Dr. Mary Putman who was the first woman of America to graduate from the Paris E'cole de' Medicine, received professional recognition. In Philadelphia, women were championed by Drs. Hartshorne, Atlee and Thomas; in Boston, by Drs. Bowditch and Cabot; in Chicago, by Dr. William Byford. The various State Societies have admitted women the years following: Kansas, 1872; Iowa, 1874; Vermont, 1875; Maine, New York and Ohio, 1876; California and Indiana, 1873; New Hampshire, 1879; Minnesota and Massachusetts, 1880. In 1886, 91 hospitals in the United States admitted women to their clinics. In Philadelphia, in 1883, the first woman interne was appointed to the Blockley Hospital after a competitive examination. In 1881, two women were placed on the visiting staff. In Chicago, the hospital privileges have been most equitably distributed. Cook County has had five women internes, and the Insane

Asylum has a resident woman physician. Dr. Sarah Hackett Stevenson is a visiting physician to the Cook County Hospital. Dr. Carson of Pennsylvania, at the meeting of the State Society offered a resolution, "That a female physician be appointed for each insane hospital or asylum where female patients are confined." This has been done in many states, both for the good of the institutions and the profession, and it is to be hoped that it will soon be so in every state. In 1882, Dr. Putman Jacobi was invited to lecture on Children's diseases in the New York Post-Graduate College, she being the first woman to lecture in a masculine school. Dr. Sarah McNutt holds a chair in the same school. If time permitted, a history of the work that women have done and are doing would amply repay the earnest effort of those who have been the means of elevating woman to the place she now so ably fills in every department of the profession.

As yet women have not accomplished much from a scientific standpoint; they have been doing pioneer work. But they have a resolute helpfulness in dealing with the individual cases entrusted to their care, and a passionate loyalty to those who have put their trust in them. Today, the woman physician has every opportunity to fit herself to combat disease and she has the help and sympathy of the profession. Now it is hers to show by conscientious, faithful work that woman will be in the profession an honor and a refining influence.

Four years ago I came among you a stranger, and from the first I have received only kindness and consideration, I being the first woman on whom you have conferred the honor of reading a paper before you. I thank you.

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Dr. Goodell never passes a sound into the uterus without first demanding a full history of menstruations.

Attention to this rule will often prevent your tendering the designing patient a cheap abortion. Even with a clear history he repeats the rule of the elder Dr. Goodell, "cervix hard as the tip of your nose—no pregnancy exists. Cervix soft as your lips—pregnancy almost certain to exist."—*Medical World*.

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SATURDAY, JUNE 22, 1895.

EDITORIAL.

THE REMOVAL OF THE "REPORTER."

The publishers announce the removal of the MEDICAL AND SURGICAL REPORTER from the present address in Philadelphia, Pa., to New York City, where it will occupy quarters in the magnificent new Constable Building, 109-111 Fifth avenue, corner of Eighteenth street. Both the editorial and the business offices will henceforward be located at this address. All persons whatsoever having business of any kind with the MEDICAL AND SURGICAL REPORTER, will please make note of this change and direct all communications accordingly. Exchanges are requested to make immediate alterations in their mail lists. Books for review, reprints, original articles, and all communications of any nature intended for editorial attention, should be directed specifically to the Editor of the MEDICAL AND SURGICAL REPORTER. All matters relating to the business conduct of the journal should be directed specifically to the publishers. Considerable time will be saved and many

mistakes avoided if correspondents will observe this simple request.

This transfer to New York City has long been contemplated and, after careful consideration of all questions involved, the publishers' decision is as here announced, they having become convinced that the highest interests of the REPORTER and of its vast patronage will be advanced by the change.

Forty-three years ago, when the MEDICAL AND SURGICAL REPORTER made its first appearance in Philadelphia, American medical journalism was in its incipency and Philadelphia long had been and still was, the undisputed centre of American medicine. The development and changes made during these forty odd years, have been as great and as radical in the science of medicine and its correlative enterprises, as have been the changes and developments in any field of human effort. The REPORTER has grown with the growth of American medical science. It has kept its

position in the front rank of medical journalism, and it is because of its determination to advance yet further and higher that the present change is made.

It may seem somewhat venturesome for a journal to remove from the place where it was born and has lived for so many years, and undertake to establish itself in a locality where the field is already occupied by journals of the highest character, but the REPORTER is not going to New York to seek a living as an artisan out of employment. It goes as a well established business seeking opportunities for enlargement and growth under conditions which will allow of such. In journalism, as in almost any other business, of all cities in the East, New York unquestionably offers the finest facilities. Instead of going to New York to "hunt for work," the REPORTER takes to that city all of the interests and influences acquired during a successful career of more than forty years.

Again, while Philadelphia has been the abiding place of the REPORTER, this journal has never professed to be distinctively representative of the local profession. Indeed, surprising as it may seem, with so great a number of medical journals published in that city, Philadelphia has not one periodical which can be said to represent the local profession. Several publications issued are avowedly in the interest of one or another individual institution. No journal, however, represents Philadelphia medicine in the same sense that the local professional interests of other large cities, as New York, Chicago, Boston, etc., are constantly represented by the journals published in these respective cities. This is a great misfortune to local interests as eventually, must be discovered by those who are responsible, who live apparently only to preserve ancient customs, and who evidently are blind to the fact that the "world do move." The greater misfortune, however, is to the cause of scientific medicine and the advancement

of higher medical education, for no body of scientific men, at home or abroad, is, so far as professional qualifications are concerned, superior to the medical profession of Philadelphia. For such a body wittingly to allow the continuance of customs and policies which we little influence and suppress knowledge which of right should be given to the entire profession is, now, as culpable as, presently it will be found to have been suicidal.

It has been the design of the REPORTER to present to the profession-at-large medicine in general rather than local interests, and since it is not essentially dependent on local support, residence is a matter largely of convenience and business facilities. The removal of the entire business to New York will involve no change in the REPORTER's policy, but it will open up some opportunities for increasing its usefulness and enhancing its value to the general practitioner, for whose use in practical application, it endeavors to supply accurate information of the procedures of modern medical science.

Diphtheric Vulvitis in a Child.

Gnietel (*Jour. of Cutaneous and Genito-Urinary Diseases*) has reported the case of a girl, one year old, who for five days had been irritable and restless and appeared to suffer pain referred to the genital region the symptoms being aggravated during micturition. Examination disclosed several patches of false membrane covering anteriorly the internal portion of both labia majora and nymphæ and invading the urethral orifice. The membrane was firmly attached and grayish-white in color. It was further learned that two fatal cases of diphtheria had recently occurred in the house in which the child resided, the last but a week before she was taken ill. There were no other symptoms. Bacteriologic examination of the membrane revealed the presence of diphtheria-bacilli. The patches disappeared upon the use of local applications, chiefly of hydrogen dioxid and mercuric-chlorid, and the child made a good recovery. At no time were marked constitutional symptoms observed.

SOCIETY REPORTS.

THE MANAGEMENT OF THE NEW-BORN.

See page 847.

DISCUSSION.

DR. J. W. BRANDEAU, Stribling: I have a few remarks to make. The first is as to the length one cuts the cord. I was taught and have been in the habit of cutting the cord about two inches in length, giving room for the application of a second ligature before putting on the dressing, which I apply midway between the first one and the abdomen of the child. I have never had a case of hemorrhage from the umbilical cord.

As to the dressing of the cord. I have been in the habit of using just plain clean cotton cloth—cheesecloth when I can get it in the house perfectly clean. I cut a little hole in the center, bring the stump of the cord through, and lay it to the side it will go the most naturally. I then take another clean fold of cotton cloth and place it smoothly over the cord, and over this place the flannel band. I do not advise the use of grease because that retards the absorption of the cord.

As to asphyxia. I think the old-fashioned way of blowing into the nostrils of the child gives the best results. I have been told that by this method we blow carbonic acid gas into the child, but I believe that with two or three deep breaths we so change the residual air that we do not blow much carbonic acid gas into the child. I have worked on them sometimes an hour, even after the heart would cease, sometimes before natural respiration would supervene.

As to feeding the child. When the child rests quietly it should not be disturbed. When it becomes hungry it will let you know. I put it to the breast that it may get the first oily substance in the breast, which acts as a laxative; and to promote the action of the uterus in this way reflexly I use the cow's milk, adding a little sugar to make it more palatable.

DR. T. J. HAPPEL, Trenton: I don't agree with the paper. I don't believe some of the statements there are true. I would never waste two hours fooling away with a dead child. If it is dead it is dead, and we ought to know whether or not it is dead within less than two hours.

Another thing, I never saw a piece of adhesive plaster placed on a surface without producing an eruption of some kind. Consequently I wouldn't place a piece of adhesive plaster on the abdomen of a child. I would use the band also as a preventive, for I would rather take the preventive measures than to try to cure.

As to the feeding. I don't think the Lord ever made a baby but he provided a way to feed it, and I believe the Lord has provided also the best bottle ever made for that purpose; and let us use that to feed our babies and not feed them on Mellin's food nor cow's milk nor anything else.

DR. T. K. POWELL, Dancyville: I think it is altogether unnecessary to tie the cord twice. We can leave the part of the cord towards the placenta loose. I think more children have been starved to death on Mellin's food than have ever been saved; and as to the fat meat, I don't see any advantage it could be, except possibly to make the child swallow better. It has been used by the darkies for this purpose. A piece attached to a string would be suspended from the ceiling in the middle of the room, a little above the children's heads. When the little negroes could no longer comfortably swallow the bread upon which they were fed, they would jump up and catch the piece of fat meat in the mouth, thereby lubricating the parts.

DR. N. C. NEWMAN, Normandy: I don't see the necessity of giving the newborn babies whiskey. As to the fat meat, the baby's stomach and intestinal tract are not in a condition to digest oils and meats. This can only make the baby sick. There is not a man here that can ramapiece of fat

meat down his throat without it making him sick.

As to tying the cord two or three inches long. It is a wholly useless structure after it is cut, and there is no hemorrhage from it even if you don't tie it at all. I don't see the necessity of cutting it two or three inches long.

DR. H. J. WARMUTH, Smyrna: If the child is apparently dead and warm water does not revive it, I introduce my finger into the rectum and attempt to dilate the sphincter ani. If that does not effect anything, I am satisfied the child is dead. I do not apply two ligatures to the cord. It cuts off quicker without them.

DR. C. HOLTZCLAW, Chattanooga: The feeding by mothers must be stopped. It is simply a relic of barbarism. In these days of artificial light, syphilis, tuberculosis and dyspepsia, there is hardly one mother out of a hundred gives good rich food for the infant. Artificial milk, cow's milk, is the only food which should be used, and mother's milk should not be given to the child unless it can be properly sterilized. I would like my friend Happel to get a law passed through the Legislature to have nursing by mothers stopped.

DR. W. FRANK GLENN, Nashville: Genito-urinary men sometimes have something to do with new-born babies. There is no other subject, I believe, in the practice of medicine in which there is more folly and the exercise of less common sense. We give up too soon in nearly every instance in the attempt to resuscitate the new-born baby. I don't think we ought ever to cease work under three-quarters of an hour, at least. We are not scientific enough to say when they are dead. They may not breathe and the pulse may not be perceptible, yet they may live. One thing I disagree with Dr. Marable in. If the child cries, give it a little catnip and whisky. If the child is ill during the first few days, he is usually hungry. If the mother's milk does not satisfy him, give him some cow's milk and sterilized water sweetened. Nature is the best guide on earth as to food.

DR. HAPPEL: Didn't you say yesterday, if the child cried the best thing was to circumcise him?

DR. GLENN: Immediately on ligating and cutting the cord, I would remove the prepuce; therefore, that would have

been done and could not be blamed for it.

As to the cord. You have here a useless appendix, which must slough off. You need simply antiseptic dressing. I wrap it, after cleaning, with carbolic gauze, then with soft cotton to protect the abdomen of the child, and secure it, and in a few days it sloughs off and the umbilicus is well. I do think if anything in medicine needs common sense and the discardance of old women's advice, it is the management of the new-born. It is a mistake to think a person living at a cross-road in the country is not entitled to the scientific practice of medicine as well as those in New York City and London. If the old women in a cross-road of fifty inhabitants would say: "Put a piece of fat bacon in the child's mouth," I would say, "No, I don't want it." And if they said, "Why, we have all done it," I would say, "The child's mouth was made for the mother's milk and not for the fat." Then, for the cord, plain antiseptic dressing is all that is necessary.

DR. M. L. BRADLEY, Saddle River: We have neglected to speak of the eye. I always use a solution of nitrate of silver, which is dropped into the eye. My brother, over there, would lead us to believe that the mothers are infected with diseases, that the child has to pass through an infected passage, and the child's eyes are exposed often to the gonorrhoeal discharge, which could be gotten out of the eyes and the child protected from the disease the mother had.

DR. ROBERTS, I want to say a word in defence of the scorched linen. In this regard the old women were ahead of Lister, for they rendered it aseptic. Therefore, if you have to resort to a piece of cotton or linen which has been lying in the drawers for a long time, by passing it through the flame you, to a certain extent, get rid of germs.

You make it more or less absorbent, if it is dry.

DR. SMITH: The method of Crede is the introduction into the eye of a two to nine per cent. solution (ten grains to the ounce) of nitrate of silver. This should be dropped into the eye immediately after birth after cleansing any discharge on the outside of the eye. This has reduced the percentage of ophthalmia neonatorum cases from ten to less than one per cent.

DR. GLENN: Do you mean every child born is to have medicine dropped in to its eyes, whether you know of disease or not?

DR. SMITH: Yes, sir.

DR. GLENN: I would never agree to that. It is unnecessary to drop any such solution into the new-born's eye.

DR. SHEDDAN: That may be all right in the state of New York, where nearly the whole state is a city, but in country practice ophthalmia neonatorum is a very uncommon disease, and I think it would be absurd and ridiculous to go through any such procedure.

DR. BAXTER: It is not a question of the country or city, but the chance of ophthalmia neonatorum arising. New York recognizes neither city or country, and it has reduced the rate markedly. It is a scientific point we are arguing.

DR. SHEDDAN: In this work of obstetrics in the country you may take the universal opinion of country men. What is it you wish to prevent the eye against? Irritating vaginal discharges is all you claim for it, from gonorrhoeal infection from the mother. In country work, as my friend, Dr. Joseph Price has said in his acquaintance in the valley of Virginia, ophthalmia neonatorum would be as great a curiosity as would be a case of leprosy in the city of Philadelphia, or more so. No, sir; I wish to say with Dr. Price, in this work where due precaution is used—I admit it is needed in the cities—it is absolutely useless to talk of dropping such a solution into *every* child's eyes. I would like to ask if that prescription was in the Garden of Eden, and has it been handed down ever since? When did blindness commence? In my practice in the country, in 554 cases of labor I have never seen ophthalmia neonatorum, except in the negro population.

DR. HITT: Our friend has just spoken of ophthalmia neonatorum in the Garden of Eden. I have just returned from a district as near to it as any man can get—India,—and I will say there are thousands and thousands of children born there annually who have this disease.

DR. OMOHUNDRO: It is a law in Austria to use a two grains to the ounce solution of nitrate of silver. It is considered malpractice if the doctor fails to introduce it.

DR. W. I. EDWARDS, Nashville: I think a physician should have sufficient intelli-

gence to know when a child he delivers is subject to such trouble, and then is time to apply the nitrate of silver and not put it in every infant's eyes.

DR. H. BERLIN, Chattanooga: The nitrate of silver is recognized as a preventive throughout the whole civilized world. As to my friend saying such a disease does not exist in the country, my experience is quite different. Cases of this kind of disease are not stayed, it seems, by the hand of man. Consequently, he may not know what is going on in his own community. As nitrate of silver in such strength as is recommended, a one or two per cent. solution, can do no harm to the eye, and, it seems, may do considerable good, there is no contraindication for the use of it. In fact, in Austria the mid-wife carries not only the carbolic solution for the hands, but she must also carry this solution of nitrate of silver for the eyes of the child. Now, Dr. Glenn says every boy should be circumcised as soon as born; why not put this in the eyes of the baby at the same time? It is not absolutely necessary to understand that we must use it as a preventive against this disease produced by the gonococcus. It has been remarked that in India it is produced, not by gonorrhoea, but by the filth and dirt. Now, if the gentlemen in the country would come to the city, it would give them a good chance to see how these things are transferred from the cities to the country.

DR. SMITH: In regard to the point Dr. Edwards makes, I will say we cannot wait until the diagnosis is made because it is everlastingly too late. The nitrate of silver solution must be dropped in before the germs have had a chance to develop in the tissues. At that time there is no disease of the tissues and the germs are simply on the surface. In regard to this disease being absent from the country, the experience of every specialist, I think, will contradict that, because these cases come to us from the country at least as often as from the city. And suppose Dr. Sheddan has had 554 cases without a case of ophthalmia; suppose he has had a thousand, would it not be better to put in a few drops in the thousand cases than to have one case of ophthalmia neonatorum? The statistics in the blind asylums, where this practice is not followed, show that ten per cent. of the inmates have ophthalmia neonatorum.

DR. GLENN: Does every child having

ophthalmia neonatorum go blind? Do you mean, if you don't prevent it, you will lose the eye if it exists?

DR. SMITH: No, not always; but the great majority, even if properly treated, will become blind.

DR. GLENN: I wish to say I have never lost an eye, where I have had an opportunity to treat the patient properly.

DR. T. H. MARABLE, Clarksville, (closing discussion):—The discussion seems to have been so diversified that a man could take almost any course that he sees fit in the treatment of the new-born. As to resuscitation. I must confess, and I am very sorry in that confession, that I am not such a brilliant diagnostician as Dr. Happel, in deciding as to whether or not the child is dead in 20, 25 or 30 minutes. I would not be surprised, if Dr. Happel has discontinued trying to resuscitate children in that time, he has found them living, if he has not buried them too soon, for I have treated them an hour and a half and then laid them away and known them to be resuscitated. Certainly you can resuscitate children when they are seemingly dead.

Now as to Dr. Holtzclaw. Yesterday I was struck by Dr. Powell's statement that East Tennessee was God-forsaken, because I had been taught that East Tennessee was the pure part of Tennessee. I think the purity of the air was what led them to go to the polls without the poll-

tax receipt. But he says the frequent diseased condition of their females would cause them to resort to artificial feeding. Well, I am glad to say this is not the case in Middle Tennessee. Our women are healthy enough to nurse their babies, unless they are too fashionable. I hate most awfully to have to acknowledge that fact, after being raised and taught what a healthy country East Tennessee is.

As to Dr. Powell. Dr. Powell says in North Carolina, where he practiced before the war, they would hang a piece of fat meat up from the floor for the little negroes to jump up and grease their throat with. I did not practice before the war, and can say nothing about that.

I can see no use of going further into this matter, except the eye trouble. I did not touch that through an oversight. I began the practice of medicine in the country, have been in the profession eighteen years, and have seen but two cases of ophthalmia neonatorum. In neither was there blindness following. I do as a fact wipe off the face, but I must confess I would never follow the practice of putting foreign matter into the eye. The Doctor spoke of adhesive plaster. It was surgeons' plaster I referred to. Perhaps he did not clean the child thoroughly enough. If he will try that, and try a little longer to resuscitate the child, he will probably succeed better.

THE DAMAGE SUIT.

See Page 849.

DISCUSSION.

DR. MENEES: There is not one of us who is not more or less interested in this subject; almost all of you certainly much more so than I am, and the young members especially, who have their races in the main before them. Dr. Eve states in that paper correctly that the large majority of these suits are brought by pauper patients. He might have gone further correctly and stated that nine out of ten of them are brought by professional pirates. [Applause.] Sir, are there no means of pro-

tection against this sort of insidious and stealthy assault upon the members of the best profession, except possibly the theological profession, and the one which does the most charitable work, not only without gratitude, but absolutely with malice and prosecution at the bottom of it?

One time, Sir, during the life time of Dr. Eve's father, I was summoned from my couch to go see a woman, who had unfortunately sustained some accident on the way home from church. The messenger, who was a very bright young man,

impressed upon me especially that they wanted me and nobody else. I said, "You are mistaken about that, you want anybody else rather than me." "Well, she must have you and she will have nobody else." And he talked about it so convincingly and earnestly, I said, "Young man, there is a malpractice suit lying at the bottom of this. Go for Dr. Eve and get him." Very reluctantly the messenger went for Dr. Eve. In the ripeness of time the Doctor came to me and asked if I had any recollection of that case. "Don't you think, they have sued me for damages in that case?" I said, I knew from the beginning there would very likely be a suit for malpractice. Dr. Eve and Prof. Lindley were both sued.

Gentlemen, they lie in wait for you in the dead of night, come and arouse you from your slumbers, and with their oily tongue seduce you and rob you not only of your services but of your well-earned gains.

DR. W. FRANK GLENN, Nashville: I want to say a word in reference to the action of the profession when a law suit threatens. A patient almost invariably, before he sues for malpractice, goes to some Doctor he has confidence in and relates the case, with the statement that a physician did so and so. It may be wrong or ignorant, and the Doctor says it is wrong, and the patient immediately concludes to enter suit. I have always discouraged these patients. When asked if I would be a witness I have said, "No Sir, I will not." I would not go to the court house for any such thing. You can nine times out of ten say, "You have not paid him, probably, when you did send for him, and I will not testify against him." We should stand as a brotherhood, and I believe it is safe to say not a suit is brought without the advice of some professional man being asked.

DR. T. K. POWELL, Dancyville: My knowledge of these cases is that they are usually gotten up by the shyster lawyers who haven't much to do. A plan was suggested in Chicago, viz., for you gentlemen of Nashville, for instance, simply to employ a first-class lawyer to take charge of these cases throughout the year, and pay him a salary. Dr. Eve and some others can stand these suits, but some of us cannot afford them. If we employ to take charge of these cases, we will stop them to a great extent at least.

DR. W. A. H. COOP, Nashville: I don't aid or abet a suit against the veriest quack. Not that I have any sympathy for the quack, but for the precedent. If you aid and abet a suit against a quack and obtain damages against him, then some other individual will undertake to get damages against the honorable, upright and well-prepared physician. I well remember in the graduating charge, the late lamented Governor said, "Swear for no other; I will swear for you."

C. Holtzclaw, M. D., Chattanooga, presented a paper on

CHLOROFORM.

DISCUSSION

DR. T. L. MADDIN, Nashville: The subject is a very interesting one. There is one point I will speak of, and that is in reference to the dilatation or stretching of the sphincter ani. The most extraordinary experience I ever had with the administration of chloroform was when I was dilating the sphincter ani in performing an operation for hemorrhoidal tumors. The patient was a distinguished officer of the Confederate Army. I had been operating for some twenty minutes or half an hour, and thought I had removed all of the tumors. I insisted upon him taking ether, although I believed chloroform the best for that kind of an operation. I got through, except a little pimple of a tumor. I said to the Colonel, There is only a little pimple left and if I can clip it off the operation will be done. The gentleman administering the anæsthetic was a man of inexperience, but the Colonel said, "Don't be afraid of giving me chloroform. I was shot almost to pieces in the Confederate Army, and was filled with chloroform for three months. They just gave it to me by the gallon. I have taken chloroform enough to swim a boat." I whispered to the gentleman, to just give the Colonel a whiff or so of the chloroform. He didn't put a teaspoonful of chloroform on the inhaler. I felt the pulse just before I began to operate, thinking it was all right, but there was no pulse. I thought he was dead. They all thought he was dead. I was dilating the sphincter ani and yet that symptom occurred. It is true I was not dilating at that time, but I had been dilating for some time previous.

I worked two hours and a half to keep

the man alive. After we had kept up artificial respiration for an hour and a half without any apparent effort on the part of the patient to breathe, we stopped, and he made one inspiration. We waited for a second, but it didn't come. We then commenced our artificial respiration again, and after about five or ten minutes we suspended the artificial respiration and he gave us two inspirations and stopped, and stopped so long I was afraid he would never breathe again. We commenced the artificial respiration again, and absolutely it required two hours and a half to resuscitate him. He is living to-day.

DR. SMITH:—In regard to the use of cocaine in operations on the nose. The use of cocaine in chloroform narcosis has been considered especially dangerous. The symptoms from cocaine and from chloroform we would consider in the same way, and cocaine would be contraindicated when we use chloroform. I have never used cocaine and chloroform at the same time. I would suggest, as an anesthetic for the mucous membrane, a solution of antipyrin. With regard to the dilatation of the sphincter ani, I see that the suggestion is made to place a piece of ice in the rectum.

DR. GRADY: I have not had as much experience in the use of chloroform as Dr. Holtzclaw, yet I have used it and seen it used for 25 years, and I must say I have never seen any trouble from its use. I have seen some deaths following the administration of ether; whether from the use of ether I cannot say.

I have seen the section of the kidneys arrested after the use of ether, although not entirely arrested. So I want to commend highly and give my sanction to the paper of Dr. Holtzclaw. I would like to ask the Society one question with regard to the use of nitrate of amyl. I see some physician has recommended the combination of one ounce of nitrate of amyl with six ounces of chloroform, saying that will make it absolutely safe and effectually do away with any bad results from the use of chloroform. If any of the gentlemen have had experience with this, I would like to hear it.

DR. J. W. BRANDAU: I have recently had some experience with the combination of nitrate of amyl with chloroform. I saw a suggestion in the *Journal of Materia Medica*, that the proportion was very large

so I combined about two drops of the nitrate of amyl to a dram of chloroform. In the cases I have used it, it has had a very happy effect. In the case of an inebriate, I kept the patient under about 30 minutes without any untoward result. But in plethoric cases I would think it not so good.

The Bacteriology of Rheumatism.

Dr. Saccaze (*Arch. Gen. de Med.*) has recently reported six cases of rheumatism which clearly indicate a causative relation of the staphylococcus to this disease. Dr. Saccaze remarks that "it is frequently possible, in cases of acute articular rheumatism, to discover in the history of the case evidence of a lesion preceding the pain, and other symptoms whereby infection with the staphylococcus might have occurred." In four cases of the disease, rheumatism occurred consecutively after two attacks of sore throat in persons suffering from chronic hypertrophy of the tonsils. It is remarkable that these acute exacerbations of throat ailment are frequently observed in connection with the acute attacks of articular rheumatism. In the opinion of Dr. Saccaze, the general condition of the body which gives rise to the joint affection, occurs in these cases through the tonsils, which are constantly exposed to infection by the staphylococci which abound in the mouth.—*Modern Medicine and Bacteriological Review*.

Perityphlitic Abscess not Due to Appendicitis.

Homans (*Boston Medical and Surgical Journal*), gives the details of a case of abscess in the right iliac region occurring in a child 4 years of age. There was pain to right of and around the umbilicus, also distension of abdomen and tenderness. The pulse was 120, and temperature 103° F. A dose of oil produced only a slight movement. On opening the abdomen the healthy bowels were seen, and to the right of the umbilical region was a level surface of grayish color. This was the roof of an abscess, and on it lay the healthy appendix. The abscess was evacuated and recovery ensued, the appendix not being disturbed. Except for the youth of the patient and the fact that the appendix was normal, the case did not differ from others that are called appendicitis when operated on, and in which the appendix does not happen to be seen.

PERISCOPE.

IN CHARGE OF WM. E. PARKE, A.M., M.D.

MEDICINE.

Prognosis in Slight Amounts of Albuminuria.

Dr. G. V. Poore (*Lancet*), from the study of many cases concludes that the discovery of even a small amount of unsuspected albumen by the acid test of boiled acid urine should lead the physician to re-examine the patient carefully, to be sure that some of the concomitants of such a condition have not been overlooked. A trifling hypertrophy of the heart, slight pallor, deficient body weight, slight increase of the tension of the pulse, ever so slight a puffiness around the ankles, tongue slightly furred or slightly tremulous, a florid complexion or other evidences of an old and perhaps forgotten syphilis, at once assumes a serious importance. If, after repeated examinations of the urine, the albuminuria is found slight and temporary, the patient otherwise looking strong and hearty, with no suspicion of intemperance and with no flaws in the family history, the prognosis is good. If the albuminuria is slight and permanent, the prognosis is grave in the majority of cases. When much albumen is continually found in the urine, the patient is in imminent danger, though Dr. Poore has had one such case in which the patient lived for twenty-six years. It should not be forgotten that albumen may be temporarily present in the urine of persons who afford no reliable evidence of kidney disease. In such cases it is the result of various disturbances, such as cold bathing, excessive exercises, injudicious diet, sexual excess, menstruation, leucorrhœa, and other causes.

Do Not Lance the Gums.

So good an authority as J. Lewis Smith has recently spoken against the practice of lancing infants' gums. In a paper read before the New York County Medical Association (*Medical Record*), he said the belief prevails to a wide extent that the cutting of teeth is a common cause, not only of painful gums and poor appetite, but also of enterocolitis and other serious maladies, which are often allowed to run along until beyond the skill of the physician. Our ancestors in the profession were to blame for the wide-spread impression that much disease is due to dentition, since at one time it was a common custom to incise the gums. As to lancing the gums, he thought one could get along as well without it. If the gums were red and irritated, there must be some other condition to account for the irritation. He did not think the physiological process of normal dentition was to be interfered with any more than any other physiological process.

Sexual Debility—Their Causes.

Dr. T. R. Sturgis in a recent number of *Gaillards Med. Journal* formulates the following:

1. That the cases of sexual debility which are marked by imperfect erections and by premature emissions, are usually if not entirely due to hyperæsthesia of some portion of the urethra.
2. That masturbation has very little, if anything to do with it, beyond the fact that if indulged in to excess it may induce a tendency toward this hyperæsthetic condition, but this is no more marked in masturbators than it is in those persons who indulge to excess in the venereal act.
3. That organic stricture has little, if anything to do with it; but that associated with this hyperæsthetic condition there is an irritable condition of the canal which produces spasmodic contractions of the urethra upon attempts to pass instruments, oftentimes during the first act of micturition and at the time of connection.
4. That varicocele plays no unimportant part in these cases.
5. That neuralgia of the testis, if a cause of this disease, induces it merely as a secondary consequence to the pain which is one of the distinguishing features of this disease.
6. That tuberculosis, syphilis and gonorrhœa may also play their part and should all be reckoned with in summing up the causes which may induce this peculiar and depressing condition of affairs.

Hunger.

Many persons have noticed that even if hungry on retiring, it is an exception to have a feeling of hunger on awakening in the morning. It is probable that during sleep the functions of digestion being in abeyance, the stomach contracts, and this is probably why some persons cannot eat late at night. The empty stomach having no function to perform, contracts on itself and in the morning it requires some little stimulation for it to begin its daily work. This is why so many, especially invalids, cannot take a hearty breakfast and why in some countries the breakfast consists of a cup of coffee, and a second breakfast is taken at noon when the whole body is awake.

The hearty American breakfast strikes terror to the average European and the delicate French woman would probably faint at the sight of a beefsteak at breakfast. For those who can, it is a good plan to drink a little cold water on rising. It washes out the stomach, takes away any mucus that may have collected there in the night and stimulates the digestive glands to give forth their secretion and prepare for that important act, digestion.—*Popular H. Magazine*.

Primary Peritonitis Due to the Pneumococcus.

At the same meeting Dr. Le Gendre, on behalf of Drs. Arnozan and Bassaet (Bordeaux), read a note, of which the following is a summary:

Primary peritonitis with pneumococci is so rare an affection that its existence in the adult has been denied; but we recently met with a case in a young girl of eighteen.

The pus, in this case, presented all the characteristics of that found in pneumococcal infections, viz., the greenish-yellow color, downy appearance, consistency, adhesion and fibrino-albuminous composition which distinguish the latter. Moreover, bacteriological examination revealed the presence of numerous disseminated, encapsulated diplococci resembling in appearance those described by Talamon and Frankel, and which were not decolorized by Gram's method.

Adding this observation to those published by various authors, there are in all eleven cases, of which only two were adults. Of the eleven patients, eight died, the mortality thus being about 73 per cent, which indicates that primary pneumococcal peritonitis is much graver than any other localization of this microbe. It is probable, however, that when the affection becomes better known and intervention more successful, this unfavorable impression will be greatly improved.—*N. A. Practitioner.*

A Case of Perforated Gastric Ulcer.

Kirkpatrick (*Montreal Medical Journal*), reports the case of a girl admitted to the hospital suffering from pain in the abdomen and shoulders. This pain started two days before and was accompanied by vomiting. The abdominal pain was particularly acute in the epigastric region. The patient was not vomiting at the time she was first seen. There was tenderness in the epigastric and innermost portion of the right hypochondriac regions. The belly was tympanitic. Coeliotomy was performed. The anterior wall of the stomach was slightly adherent to the parietes. The adhesions were broken down, gas escaping, and the lesion was found in the anterior wall of the stomach, a little to the right of the oesophageal line, and more towards the superior than the inferior gastric border. The opening was a little larger than a five-cent piece, and was closed with a continuous Czerny-Lembert suture, after trimming the ragged edges with a pair of scissors. A drainage-tube was inserted and the wound was closed. The tube was removed in twenty hours. Food was administered on the third day. The patient made an uninterrupted recovery.

Electrical Treatment of Red Noses.

Dr. Helling, *Med. Rec.*, says that a red nose is due to contraction of the arterioles and dilation of the veinlets. He claims to have cured a number of cases by the application of a continuous current of moderate intensity for five to ten minutes daily.—*Ex.*

Dangers of Thyroid Feeding.

Beclere remarks that the benefits to be derived from thyroid feeding in myxedema must not make us forget its dangers; for thyroid juice poisons the heart, and may cause death by syncope. This has been found by experiment on the dog.

The writer fed an ape on fresh thyroid glands from newly killed sheep. The animal died in ten days. It had survived the same treatment when tried a month earlier.

It is said that an adult and one or two children have died in the Paris hospitals from treatment by thyroid feeding, and if this be so, it is to be regretted that the cases have not been published, so that practitioners may be put on their guard against a repetition of such occurrences. In connection with this mode of treatment the pulse is the best guide. Not only must its acceleration be noted, but perhaps still more its instability. Under the influence of the slightest effort, its frequency may be raised to 110, or even 160. At the commencement of treatment the patient ought to be confined to bed, or at least to his room, and he ought to be warned to avoid every exertion that might suddenly accelerate the heart's action. He ought to be kept under observation for some time after the treatment has ceased, because thyroid juice seems, like digitalis, to have cumulative effects. Some patients who died suddenly in England had taken no thyroid glands for some days before the fatal issue. The idiosyncrasies of patients are very various, and it is well to intermit the administration from time to time until the useful and safe dose of the remedy for the particular individual has been ascertained.—(*La Medicale.*)

Posture During the Growing Age

of children exerts a marked influence on their bodily development. Everyone is somewhat familiar with the physiological fact that the constant use of a muscle causes an increase in its size, while disuse causes it to weaken and become smaller. Recognizing the importance of this well-known physiological law, teachers and parents should keep ever in mind the effects of school life on the symmetrical and healthful development of the bodies of school children. A popular writer on such themes says:

There is a tendency among school children, especially among school girls, to assume habitual postures both in sitting and standing. The habit of throwing all the weight of the body on one leg produces a corresponding throwing of the upper part of the body toward the opposite side in order to establish the necessary equilibrium. This tends, of course, to curve the spinal column on which the upper part of the body is supported. In this position the body and all the internal organs are thrown out of their normal vertical position, and the force of gravity still further exaggerates this result. Thus the muscles of the neck are unevenly exercised in the unconscious balancing of the head upon the vertebral column.—*Popular Health Magazine.*

Effect of Muscular Overwork on the Heart.

As muscular exertion continues and the vessels of the muscles become dilated the flow of blood from the arteries into the veins will tend to become much more rapid than usual. The pressure in the arterial system will fall consequently, but that in the veins will become increased, and, unless a corresponding dilatation occurs in the pulmonary circulation, blood will tend to accumulate in the right side of the heart, the right ventricle will be unable to empty itself completely, shortness of breath will arise, and even death may occur. At first the right side of the heart is affected and the apex beat disappears from the normal place and is felt in the epigastrium; but the left ventricle also becomes dilated, though whether this is simply through nervous influence tending to make it act concordantly, or for some other reason, it is at present impossible to say. Severe exertion, even for a few minutes, may produce this condition in healthy persons, and when the exertion is over-continued it may lead to permanent mischief. More especially is this the case in young growing boys; and it is not merely foolish, it is wicked, to insist upon boys engaging in games or contests which demand a long-continued over-exertion of the heart, such as enforced races and paper chases extending over several miles. Intermittent exertion, either of a single muscle or of a group of muscles, or of the whole body, appears to lead to better nutrition and increased strength and hypertrophy, but over-exertion, especially if it continues, leads to impaired nutrition, weakness and atrophy. If we watch the movements of young animals, we find that they are often rapid, but fitful and irregular, and varied in character, instead of being steady, regular and uniform. They are the movements of the butterfly, and not of the bee. The varied plays of childhood, the gambols of the lamb, and the frisking of the colt are all well adapted to increase the strength of the body without doing it any injury; but if the colt, instead of being allowed to frisk of its own free will, is put in harness or ridden in races, the energy which ought to have gone to growth is used up by the work, its nutrition is affected, its powers diminished and its life is shortened. The rules which have been arrived at by the breeders of horses ought to be carefully considered by teachers of schools and by the medical advisers who superintend the pupils.—*Lauder Brunton in Br. Med. Jour.*

On Transmissibility of Cancer from Man to Animal.

M. Boinet, after a long series of experiments on the transmissibility of carcinoma from man to animals, states that after having made repeated inoculations on the rat, the rabbit, and the guinea-pig, he concludes that histologic examination of the lesions which resulted does not authorize him to pronounce in favor of such transmission.—*Semaine Medicale.*

Inflammation; its Nature and Significance.

Dr. J. Froehlich (*Aertz Rundschau*), as long as the organism is alive, it will react against every local irritation, that is, attempt to counteract the same if possible. If the irritation is slight, the force of resistance of the tissues will overcome it; if more pronounced than the force of resistance it becomes pathological, and the simplest form of inflammation results. Without inflammation, repair cannot take place, vital activity will cease, and destruction follows.

The real nature of inflammation consists in an active hyperemia and an increase in the processes of metabolism. There is a dilatation of the arteries, later on of the veins, and last of all of the capillaries. The blood stream is at first accelerated, but very soon becomes permanently retarded on account of the choking of the capillaries with cellular elements. The white blood corpuscles will move slowly along the walls or the vessels or become entirely stopped, and then enter the tissues in a greater or less number, where they exert an important and active influence in destroying the germs of infection.

In the treatment of an inflammation the use of ice does more harm than good. We should not try to overcome the arterial congestion, but the venous engorgement, and for this various hydrotherapeutic procedures and massage are the best. Frequently the strengthening of the whole organism is more important than the local treatment, this being especially the case in chronic processes.

Prophylactic Treatment of Ophthalmia Neonatorum.

Dr. P. Budin by long experience has found the Crede solution (nitrate of silver 1:50) effective in the prevention of ophthalmia neonatorum, but it often produces considerable swelling of the lids, with a moderate conjunctival suppuration on the second day after use. On account of these disadvantages other antiseptics, as phenic acid, corrosive sublimate, iodoform, etc., have been recommended. The author finds that a weaker solution of nitrate of silver (1:150) acts with almost absolute certainty in preventing the disease, and is free from the objections of the stronger solution generally applied. Among 2,004 cases treated there were only two cases of ophthalmia, and seven cases of secondary conjunctivitis. Patients are prepared previous to accouchement by having a bath and a vaginal injection of sublimate solution (1:4000). Immediately after birth the child's eyes are carefully wiped with cotton and one or two drops of a 1:150 nitrate of silver solution are instilled between the lids. The author has made this application to the newborn in his private practice for two years past, during which time no case of purulent ophthalmia has occurred. Only one case of mild conjunctivitis was seen that recovered in a few days under simple dressing fluids.—*Progress Medical.*

Treatment of Cystitis in the Female.

John C. Hersler (*Univ. Med. Mag.*) the chief indications for treatment are:

1. To remove any discoverable sources of irritation which act through the medium of the urine. This may be effected by a milk diet, and a discontinuance of the use of acid, pepper, etc. Any mechanical source of vesical irritation should receive appropriate treatment.

2. The urine should be rendered bland by the use of a milk diet, the ingestion of considerable quantities of water, the administration of potassium citrate, if the urine be too acid, or of boric acid if it be alkaline.

3. Pelvic congestion should be relieved by hot vaginal douches, placing the patient in the knee-chest position; and the correction of constipation.

4. The inflamed cystic mucous membrane may be relieved by the administration of boric acid, salol, ol. santal, copaiba, or creosote by mouth; or the use of injections of boric acid, carbolic acid, or nitrate of silver in suitable strengths.

5. The patient's general health should be improved by tonics, etc.

6. Rest in bed, especially in all acute cases, is absolutely imperative.

While advocating direct local treatment for cases of cystitis which do not readily respond to ordinary therapeutic measures, the writer advises that it should be employed with judgment and caution.

The Micro-Organism of Chronic Rheumatism.

Schuller (*Medical Record*) has found a specific bacillus for chronic rheumatism. The organisms are described as measuring 2.6×0.85 , and are constricted at the middle. They stain well with carbol-fuchsin, but are easily decolorized by acids. They are said to grow fast at 25°C . in the dark. All the ordinary culture media are fitted for their development. Schuller inoculated the joints of rabbits with cultivations obtained from human joints, and succeeded in producing a non suppurative arthritis analogous to the rheumatoid arthritis affecting man. The chronic rheumatism seems to be an entirely different disease from the acute, from which Schuller has only succeeded in cultivating staphylococci and streptococci, never the specific bacillus described above.

Electricity in Amenorrhœa.

Dr. Panecki, in the *Therap. Monatsch.*, says the *Medical Times*, lets the profession know that the faradic current is the most successful means of treating amenorrhœa. The poles should be allowed to act inside the uterus. The current can be increased at each sitting, and the treatments required, ranging from five to fifteen minutes, are all the way from five to thirty. The doctor had treated eighteen cases and cured them all. One was a married woman, aged thirty-one, who had never menstruated, though she had periodical headache, etc.

Presystolic Apex Murmur of Aortic Regurgitation.

Fisher (*Lancet*) cites a case, and remarks that a low-pitched presystolic murmur may occasionally be heard at the apex in cases of aortic regurgitation. The high-pitched, blowing diastolic murmur may possibly be audible from base to apex, and even in the axilla, but just at the apex a rumbling sound takes its place. It may be made to disappear by pressure of the stethoscope, and thus be overlooked. "In this instance the presystolic bruit was not low-pitched and rumbling, but of that loud, rolling character which reminds one of the sound produced by a flapping sail as it is filled by a puff of wind. Well marked though the murmur was, the mitral orifice proved to be of natural size." There was also present a presystolic thrill at the apex. Fisher also mentions that presystolic apex murmurs may occur unassociated with either mitral stenosis or aortic insufficiency, being due simply to adherent pericardium, and suggests that in both of these conditions simulating mitral stenosis the innervation of the heart may be, in some obscure way, affected, giving rise to the production of the murmur.

The Diagnosis and Theory of Morbus Basedowii (Graves's Disease).

Lemke (*Deutsche Medicinische Wochenschrift*) comes to the following conclusions concerning Graves's disease: (1) A patient suffers with Graves's disease as soon as delirium cordis and tremor are present. All other symptoms are consecutive and of secondary nature; they simply confirm the diagnosis. (2) The cause of Graves's disease is in all probability to be sought in a faulty chemical influence exerted on the blood by the thyroid gland. (3) Graves's disease, therefore, is no disease of the nervous system; one requires for its diagnosis no special neurological knowledge. He believes the diseased product of the thyroid gland to be a special muscle poison, the delirium cordis being the result of this poison exerted on the heart muscle, and the tremor the result of the same poison on the skeletal muscles.

Menstrual Agina.

M. Raymond Petit has been led to regard the sore throats of menstruation as caused by streptococci. They are generally benign, but may terminate in the formation of an abscess or give rise to facial erysipelas. The writer is of the opinion that women during menstruation should guard against infection by the use of antiseptic linen and by particular care of the mouth. Women, during all her genital periods (menstruation, accouchement) affords a specially favorable soil for the development of the streptococcus.—*La Medecine Moderne*.

Menstruation, Gestation and Small-pox.

Voight (*Volkmann's Samm. klin. Votrage*), has prepared a monograph on the influence of Variola on Menstruation, Pregnancy, Labor and Fetus. Small-pox, he says, causes congestion of the endometrium, both when the fever begins and when the rash appears; in consequence, menstruation or metrorrhagia occurs in the non-pregnant subject. Half the cases of pregnancy in small-pox patients vaccinated in youth end in abortion or premature labor. The pregnant woman's condition is desperate in confluent or hæmorrhagic small-pox. These two specially severe forms are very much more frequent in pregnant than in non-pregnant women. The mortality of pregnant small pox patients once vaccinated in youth varies between thirty and thirty-five per cent., but 50 per cent. of patients delivered while suffering from small-pox die. The danger of small-pox in pregnancy is found, as might be expected, much worse in women who have not been vaccinated. Nearly all the infants are lost, as they are either born very weak, or contract small-pox before or after birth. When an epidemic of variola occurs, prophylactic vaccination of all pregnant women must be practised, and, should an infant be born strong and healthy, it should also be vaccinated.—*British Medical Journal*.

Pigmentation in Amenorrhœa.

Lawrence (*Bristol Medico-Chirurgical Journal*) reports the case of a girl suffering from amenorrhœa with pigmentation. This became so marked as to suggest Addison's disease. She was treated with wine of iron, 1 drachm, and Fowler's solution of arsenic twice daily, burgundy in moderation, careful diet, the addition of milk, and her life regulated in accordance with general hygienic principles. This resulted in complete cure after many months.—*Therapeutic Gazette*.

The Improvement of the Results in Complete Hysterectomy for Carcinoma of the Uterus.

Mackenrodt (*Zeitschrift für Geburtshilfe und Gynakologie*) believes that the operation of complete hysterectomy for carcinoma of the uterus does by no means offer absolute results, that the disease returns in more than half the cases operated upon. One cause of this unquestionably lies, as shown by the investigation of Winter, in the possibility of the inoculation of healthy tissue from the carcinomatous part; also, and particularly, has the writer concluded from the same investigations that the operation is not radical enough. Carcinomatous nodules are very frequently allowed to remain in the broad ligaments, and a necessary result is that the disease sooner or later returns. Mackenrodt has demonstrated this through the careful examination of a large number of extirpated uteri. The operator, he says, has believed that the incisions were made only in healthy tissue

but the microscopical examination of removed organs show the infiltration extending to the line of incision. Thus, in order to improve the results of complete removal of the uterus for carcinoma, he believes that more tissue should be removed from the broad ligaments than is the custom. In accomplishing this the injury of the ureters must be carefully avoided. This last is attained by separating the bladder, not only from the uterus, but also from the anterior surface of the broad ligaments. The bladder, with its attached ureters, is thus considerably separated from the uterus, and the tissue for a distance of an inch on each side of the cervix can easily be excised. The injury of the ureters after this procedure is scarcely to be considered. The separation of the bladder and ureters from the anterior surface of the broad ligaments can be accomplished quite as well in vaginal as in abdominal hysterectomy. Where there is a rigid vagina, large uterus, and advanced carcinoma, Mackenrodt usually does abdominal hysterectomy.

Urination after Labor.

Dr. N. Recht (*Rev. Internationale de Bibliog. Méd.*) in a thesis has made a study of micturition in the lying in period. He comes to the following conclusions:

1. Urination, after labor, in the majority of cases, follows spontaneously.
2. Catheterization is but exceptionally required; if it be necessary, it should be deferred as long as possible.
3. It is only indicated when the bladder assumes abnormal proportions, or if retention occurs.
4. Catheterization is liable to occasion two evils—cystitis, in spite of all precautions, and dependence of the bladder for a time upon the catheter.

Dangers of Massage of the Uterus.

M. Pozzi presented the specimens from a case illustrating the injurious effects of massage in suppurative lesions of the appendages. A patient suffering from metritis and double salpingo-ovaritis, after an attack of pelvic peritonitis diagnosed as hæmatocele, was treated by massage, the operator being a skilled one. The treatment was badly borne, and caused no improvement. M. Pozzi afterward performed laparotomy and extirpated both tubes, which presented the external appearance of pyosalpinx. Outside of the left tube there was a small purulent area. On opening the tubes the left one was found to contain blood and the right a rose-colored pus. Under the influence of the pressure exercised during the massage, rupture of the vessels and hæmorrhage in the tubes had evidently occurred. The same pressure might also have driven pus out of the tube, thus explaining the purulent area found on the wall of the pelvis at the outer extremity of the tube. M. Pozzi believed that massage should be reserved for

chronic cases in which there was no suppuration.

M. Bouilly reported several cases illustrating the bad effects of massage. A woman with a neoplasm in the posterior cul-de-sac was submitted to massage, when suppuration of the tumor took place, causing the death of the patient. Another case of simple retroversion suffered the most painful symptoms after massage, and a third was confined to bed from its effects, though she had only a slight ovarian affection. The indications and contra-indications of the treatment should be clearly defined.

M. Lucas Champonniere had also observed similar ill effects, and had been recently obliged to perform laparotomy in one such case and hysterectomy in another.

M. Richelot had performed hysterectomy on a patient who had undergone treatment by massage with only temporary relief.

M. Routier stated that he had made use of massage in his practice for the past eight months with good results, but that he employed it only in cases in which no lesion existed.

M. Monod regarded the method as an excellent one when suppuration was not present, and in this opinion the members generally concurred, stating that they wished only to call attention to the dangers of its abuse and the necessity of intrusting the cases to competent persons.—*Universal Med. Jour.*

GYNECOLOGY.

New and Speedy Method of Dilating a Rigid Os in Parturition.

At a meeting of the Obstetrical Society of London, Dr. Farrar (Gainsborough) gave the details of two cases in which he had used a 10 per cent. solution of cocaine as an application to the rigid os. In one case he had applied the cocaine after endeavoring vainly to relax the cervix by means of chloral, bromide of potassium and morphia, and the most persistent attempts at digital and mechanical dilatation, with and without chloroform. He decided upon incising the os, and used the cocaine to this end. After five minutes he introduced the finger as a guide to the scissors, and, to his surprise, found the os widely dilated. In the second case, a primipara, forty-eight years of age, he used every effort, as before, to produce relaxation, and waited three days before making the application of cocaine, which was immediately successful. In four minutes the os had yielded. He considered the dilatation to be due to the cocaine in both cases. Dr. Armand Routh said that Dr. Dibbs, of Shankin, had recommended cocaine as relieving the pains of the first stage of labor, and that Mr. Head Moore advised cocaine and boric acid pessaries in cases of rigid os. He himself had found it useful. The president, Dr. G. E. Herman, said that two cases were rather a slender foundation upon which to base a conclusion, but if Dr. Farrar's results were confirmed by further experience, he would have made a valuable addition to our obstetric resources.—*The Lancet.*

Immediate Trachelorrhaphy.

There are always old questions in gynecology that will be resurrected and discussed and ardent supporters for both sides are not wanting. Dr. Boldt recently advocated waiting for some time after childbirth before sewing up lacerations.

This Dr. A. Palmer Dudley opposes in the *American Journal of Obstetrics* and asks a number of questions bearing on a comparison between immediate and intermediate trachelorrhaphy, and after citing a number of cases in support of his side, gives for the purpose of emphasizing his remarks the following summary:

1. That suturing the lacerated cervix properly immediately after delivery will result in primary union of the same and prevent many of the evils that follow in the wake of a union by second intention.

2. That the fear of septicemia attending the manipulation of the cervix for the same, and the introduction of poisons which will induce septicemia at the same time, is an unfounded one, and would be dissipated by giving such work a proper test.

3. That it is a method of procedure more justifiable than an immediate repair of the perineum, the latter of which the profession of to-day universally advocates.

4. That the securing of primary restoration of the laceration hastens involution, prevents subinvolution and the various forms of displacement which are induced by it in such an over-weighted organ.

5. The catgut is the proper suture and perfectly safe and reliable when properly prepared.

THERAPEUTICS.

The Rational Treatment of Diphtheria.

Local Treatment. 1. Thorough disinfection with peroxide solution, rendered neutral with bicarbonate of soda. 2. Administration of freshly prepared pineapple juice, either alone or with the tincture of the chloride of iron, if a condition of anemia be present. 3. Application of papoid, either by insufflation of powder or painting with strong solution.

Constitutional Treatment. 1. Alcohol given in heroic doses. 2. Hypodermatic injections of strychnine pushed until there is exaggeration of the deep reflexes. 3. Concentrated nutritious diet.

Wind Colic of Infants.

Dr. G. C. M. Godfrey in the *Medical Record* suggests the following:

Extract singiberis fluidi, c.c. 6 (3 iss)
Tincture asafetide, c.c. 12 (3 ij)
Aque mentha piperitæ
Aque cinnamon, aa c.c. 30 (ij)
Syrup simplicis, q. s. ad. c.c. 120 (liij)

M. Sig.—3j (c.c. 4) t. i. d. in water before meals.

Of course, the practitioner will change the quantities and ingredients to suit each case; it is very hard for an infant to take.